

European Gas Markets: Elevated concerns to moderate complacency?

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Montel Energy Day Helsinki 15th June 2023.







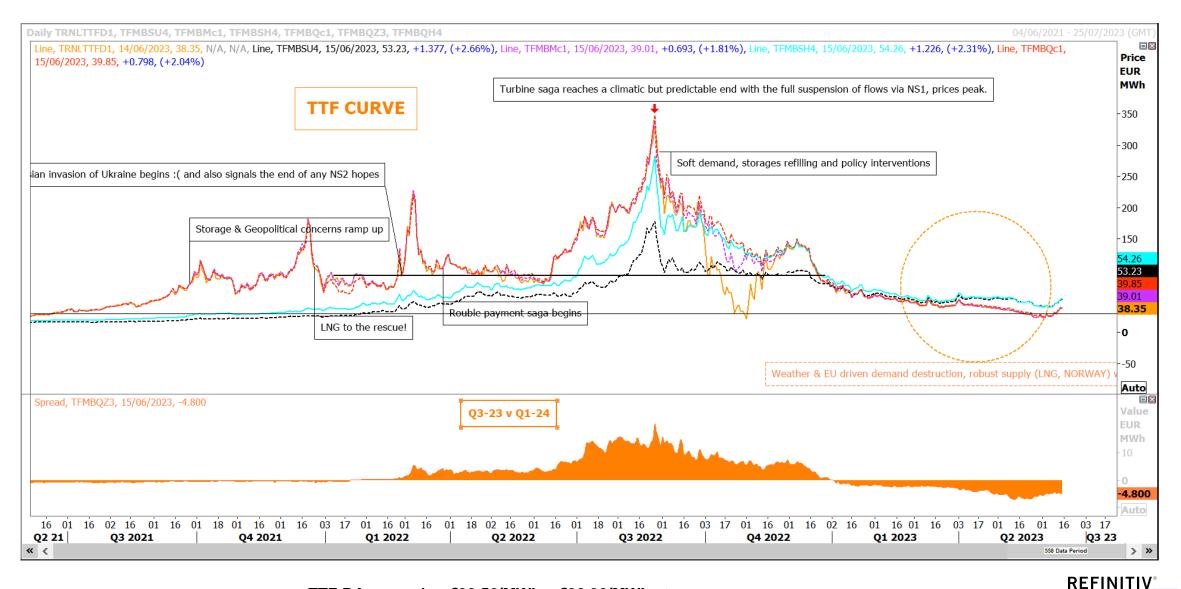


Price Action



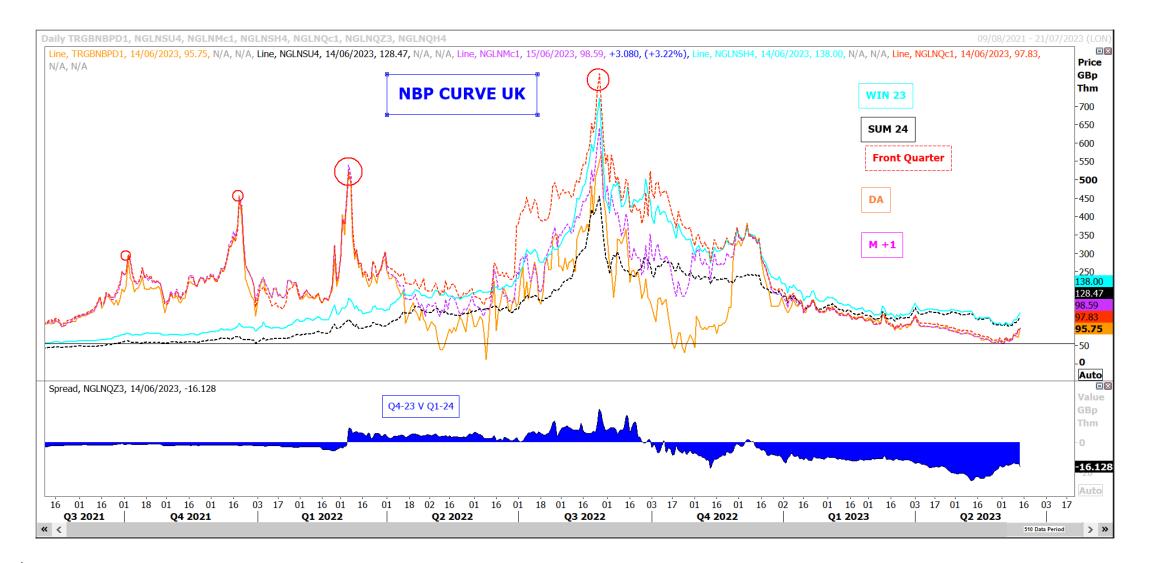


TTF CURVE

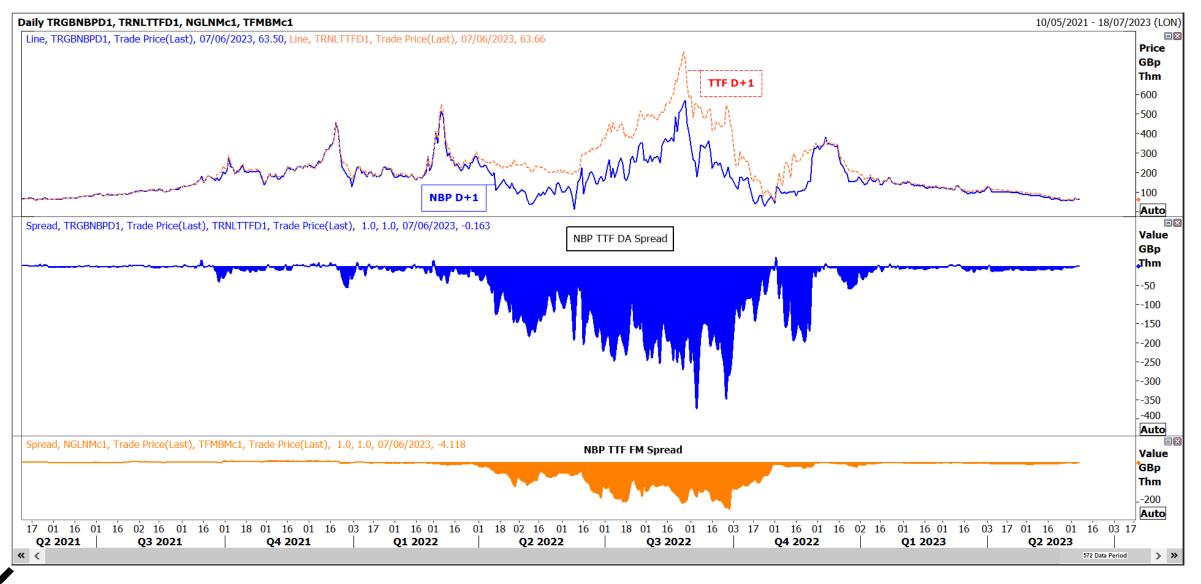


TTF DA averaging €30.56/MWh v €92.32/MWh at same point in SUM22.

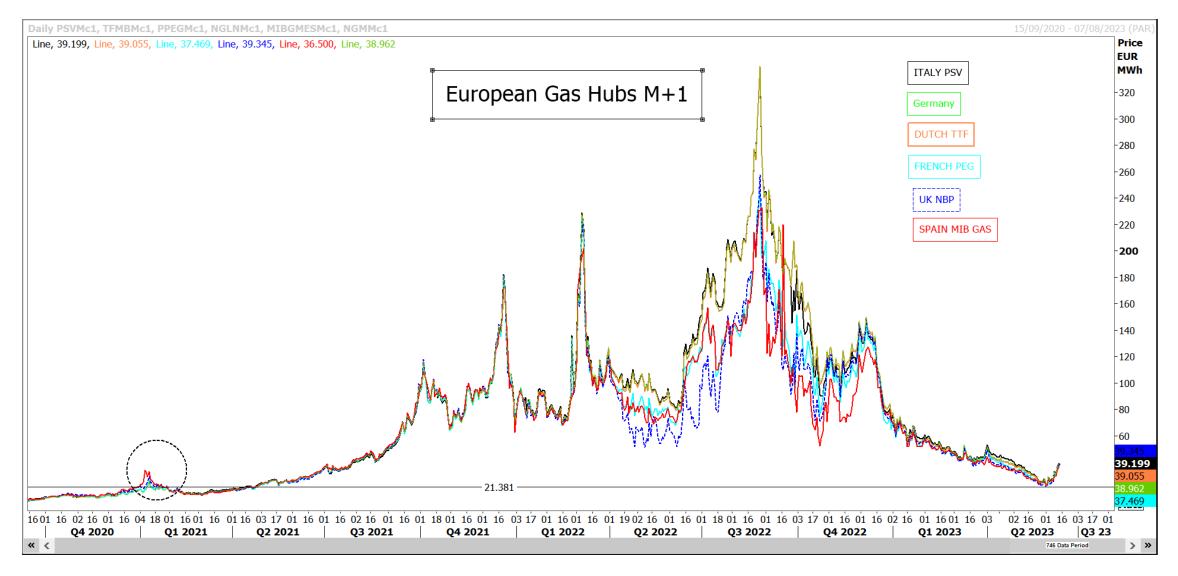
NBP CURVE



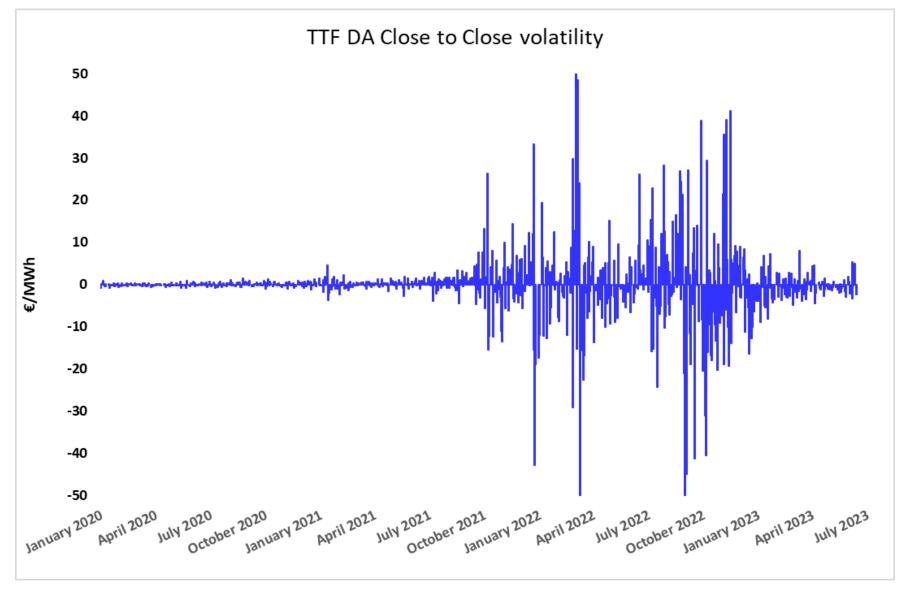
NBP v TTF Spreads



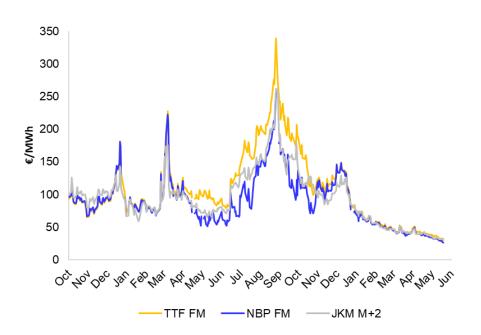
European Hub Movement



Volatility has slowed



May Recap

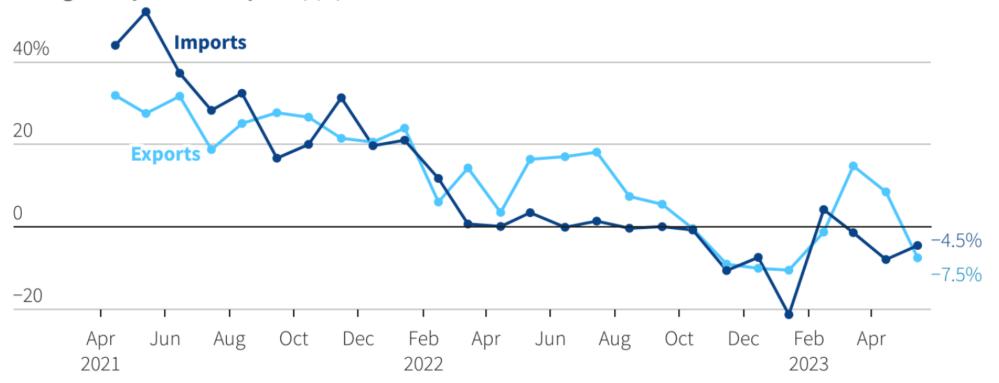


TTF	NBP	JKM
22%	22%	10%
4	-	

- NBP, TTF, and JKM sentiment has remained bearish. Thus far in May all three contracts have continued to weaken and are currently registering double-digit losses.
- North Asian spot demand remains sluggish, inventories are high, and prices have slumped to 2-year lows at sub \$10/MMBTu. The contango present in the Asian forward curve indicates demand is expected to pick up later in the summer ahead of an uncertain winter for both weather and demand but the current sentiment is mostly bearish.
- In Europe prices continue to be pressured, and storage levels remain above the five-year average. Even the recent spate of maintenance in Norway in which production has been significantly cut has failed to provide any support to prices with contracts across the curve falling back around or below Q3-21 levels as demand stutters. Total EU storage stocks ended May at 69% compared to 47% in May 2022
- Despite a slight pickup compared to last year the latest EC manufacturing numbers for March saw industrial output decline across the EU, the first month of year-on-year declines since the COVID times of October 2020. Notably, there were large drops in output from gas-intensive industries, this will continue to be a drag on EU industrial consumption and further exacerbate the bearish environment with prices expected to remain in the doldrums over the coming months notwithstanding any supply or demand shocks.
- Chinese economy is still dragging and providing headwinds to any sudden uptick in gas demand. Latest CAXIN PMI numbers signalled an expansion at 50.9, however, business confidence for the next 12 months fell to a 7-month low. Moody's issued recession warnings for US, UK and Germany. EU now officially in a technical recession after two periods of negative growth.

Chinese import/export slowdown is stark

China's exports fell much faster than expected in May year-on-year, while imports contracted at a slower pace, as factory output continues to slow amid persistent weak global demand. **Change in exports and imports (Y/Y)**



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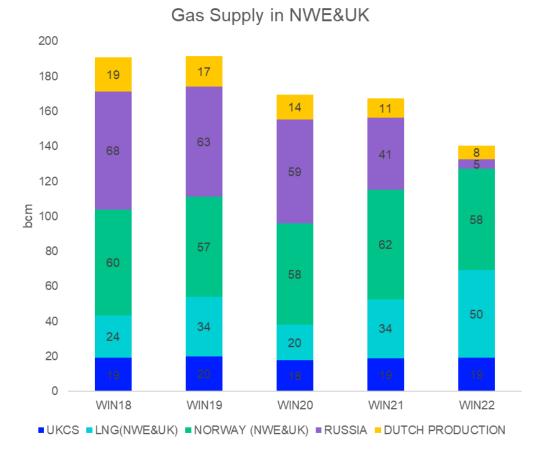
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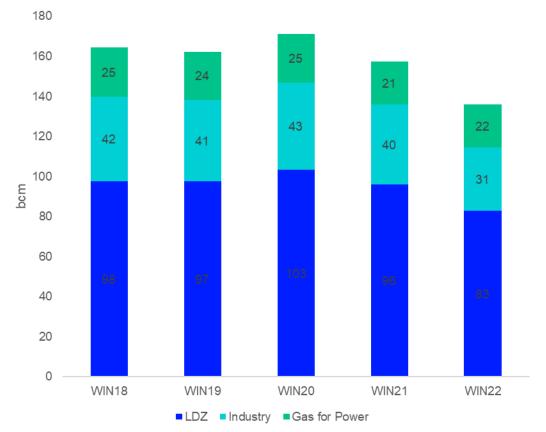


Looking at the fundamentals



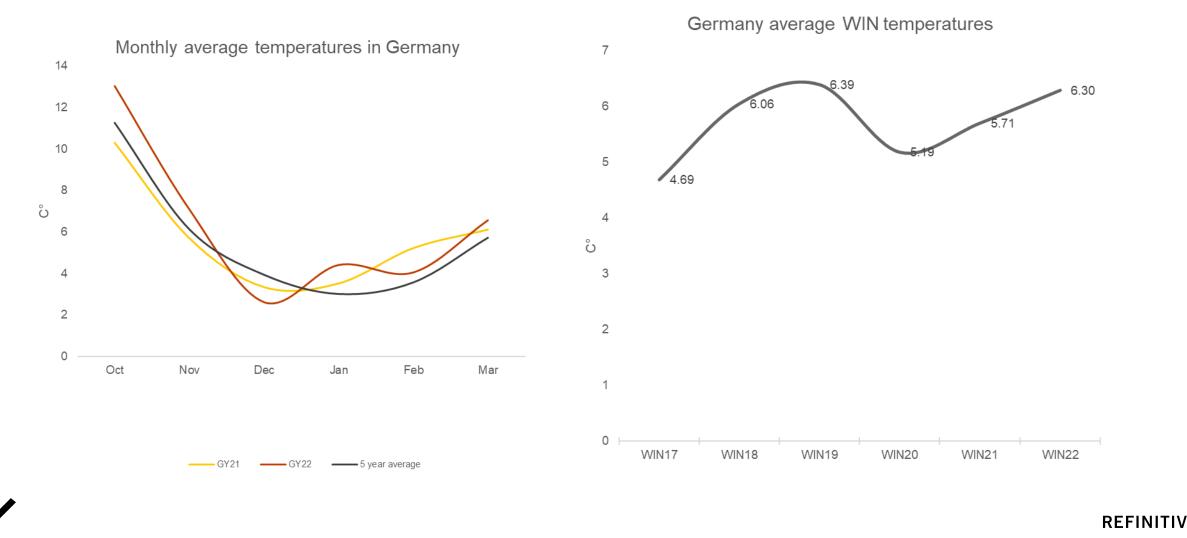
How did we navigate winter 2022 without Russian gas ? Favourable weather, record breaking LNG arrivals, energy saving measures, policy implementation and surprising adherence lead to higher than envisaged levels of demand destruction.





Gas Demand in NWE&UK

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.

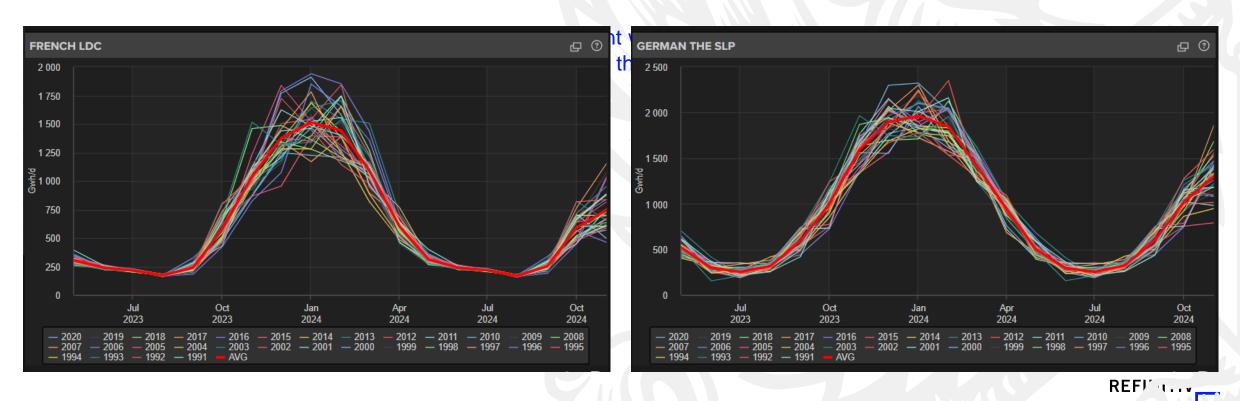


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Consumption Scenario Forecasts

LDZ consumption forecast for European countries based on actual temperature, wind speed, and solar radiation from 1991 to 2020.

A Scenario forecast is a consumption forecast based on historical actual weather data. For 1991 forecast, the model gets 1991 weather data fed into the model.



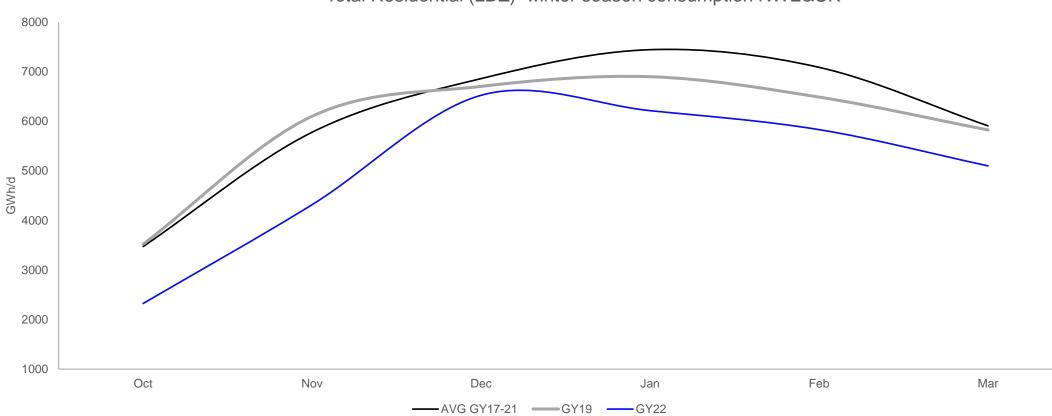
For more information: nantanaporn.udomchaiporn@lseg.com

LDZ demand destruction was substantial..



Demand destruction on top of the milder weather

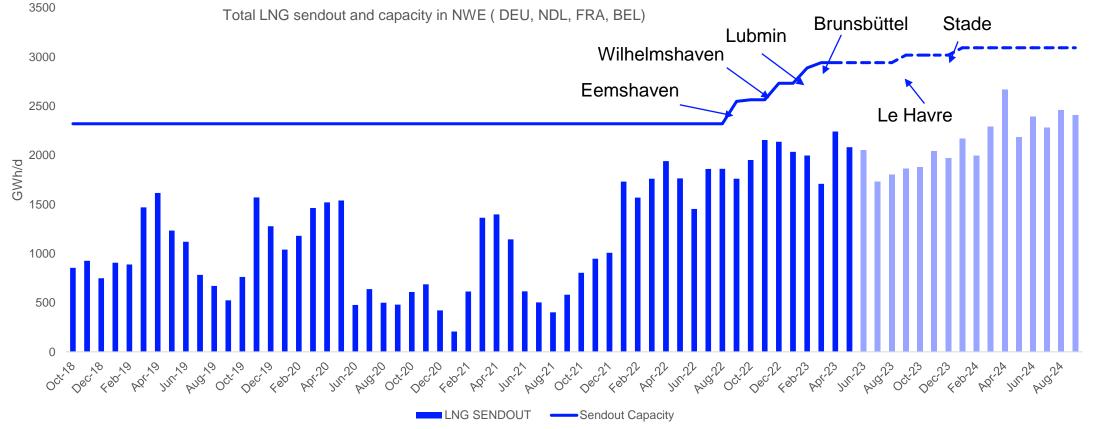
LDZ demand in WIN22 was historically the lowest. 17% lower than the 5 year average and 15% down from WIN19 which was comparably mild.



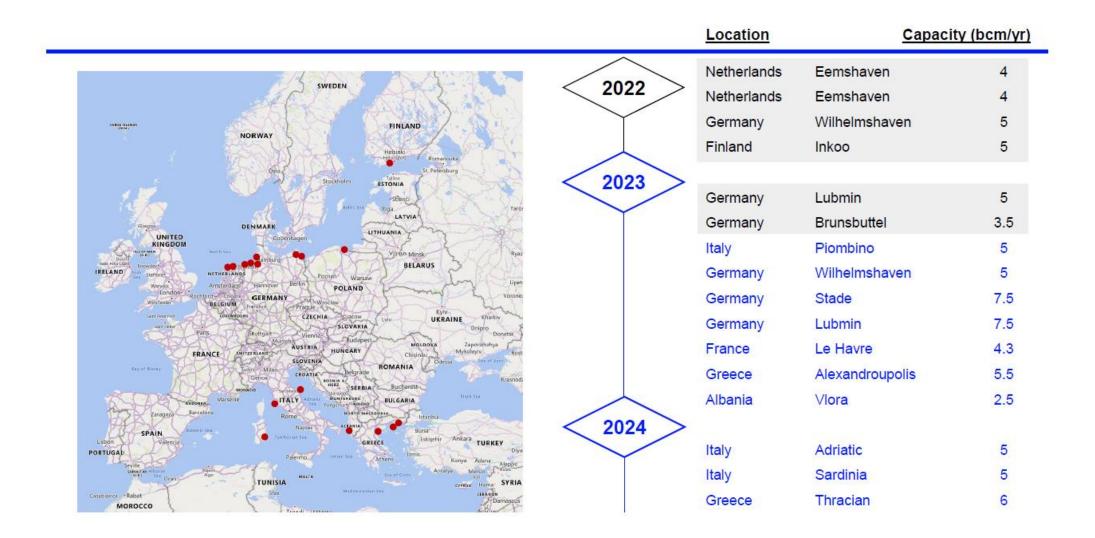
Total Residential (LDZ) winter season consumption NWE&UK

LNG imports offset almost half of Russian supply drop

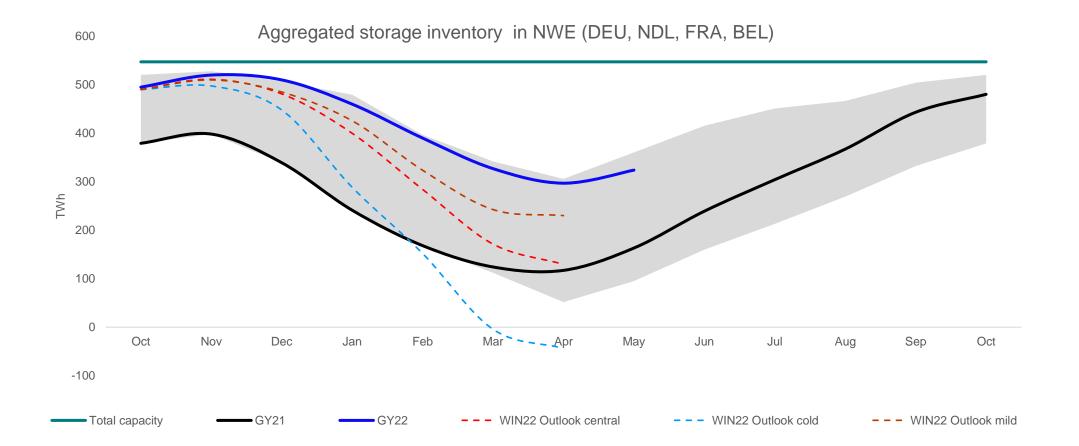
NWE&UK imported 50bcm of LNG during WIN22, this is 16bcm up winter or winter. New four FSRUs brought at a record speed, increasing sendout capacity by 680GWh/d. Our base scenario for strong LNG imports is to remain during SUM23, up 4bcm from last summer. WIN23 can see a small increase of 2bcm. Chinese LNG imports were slow to recover. Our base forecast assumes recovery of around 7.5% summer on summer, though this remains to be key uncertainty.



LNG CAPACITY INCREASES



From pre winter concerns to post winter complacency?



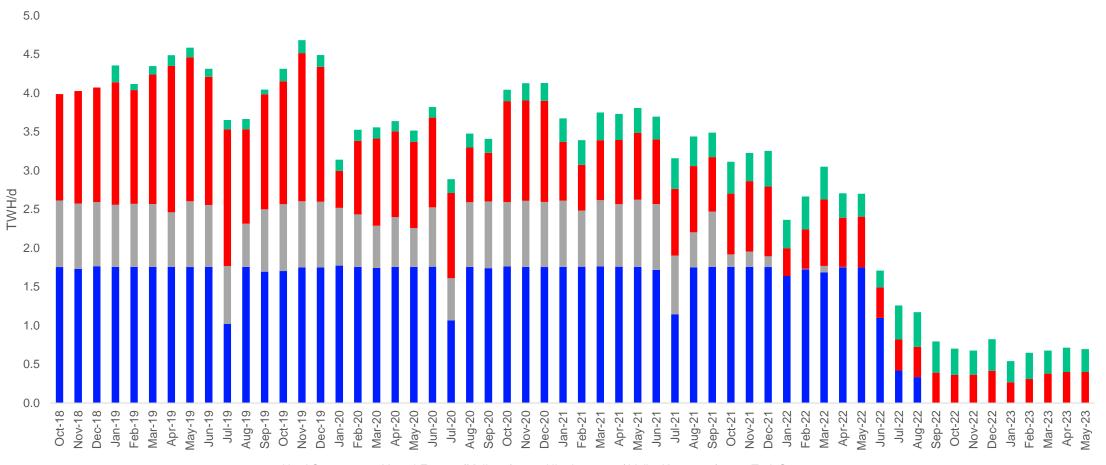


Looking forward



Russian Piped Exports History

Russian piped exports to Europe have slumped to around 20% of the level observed in 2021.



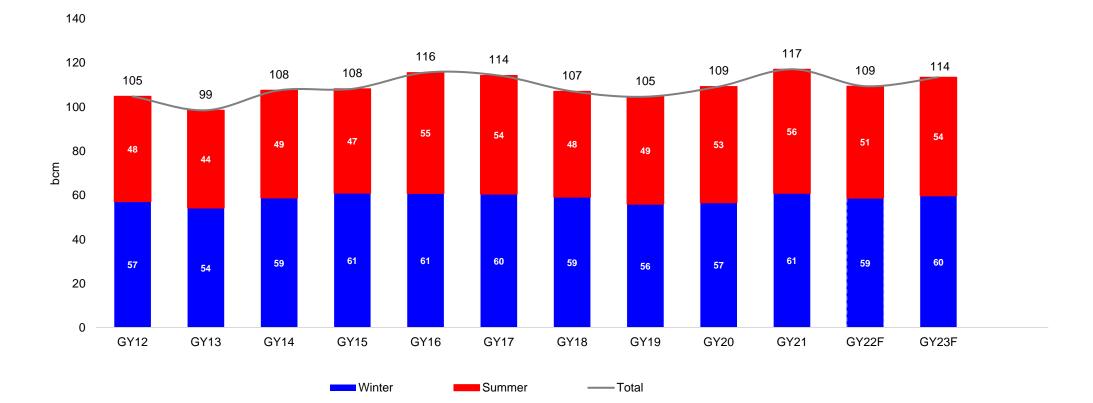
■ Nord Stream ■ Yamal-Europe (Mallnow)

Ukraine route (Velke Kapusany)

/) Turk Stream 2

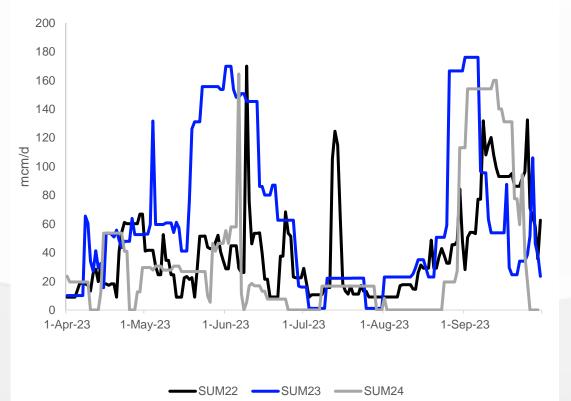
Lower Norwegian exports after the record level last year.

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 should impact SUM23 supply.



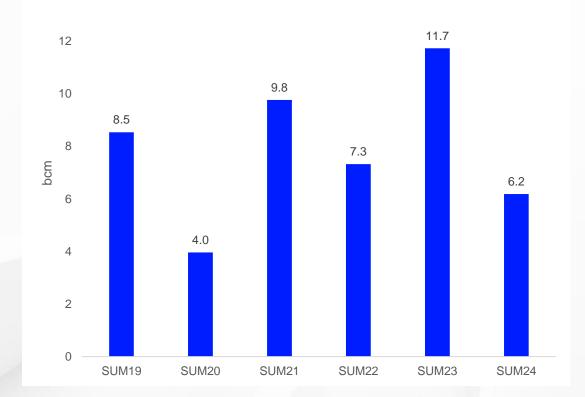
Heavy maintenance in Norway SUM23





NCS maintenance aggregated summer impact on fields and processing plants

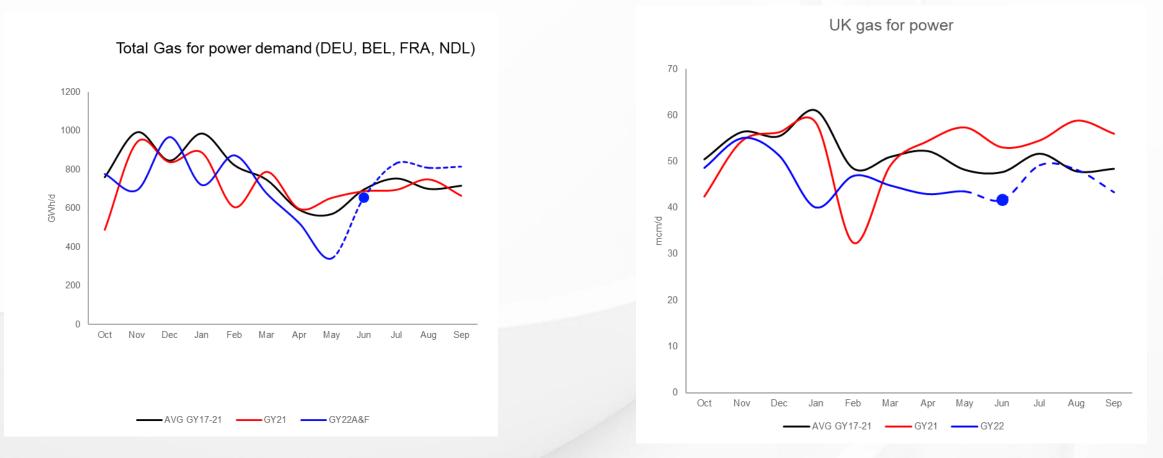
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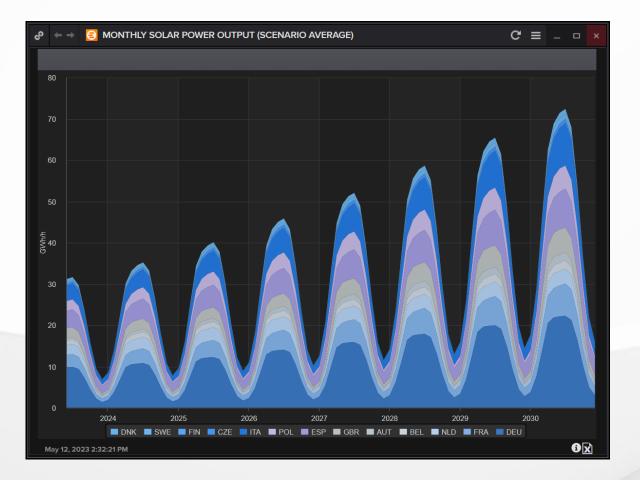
Gas for power demand

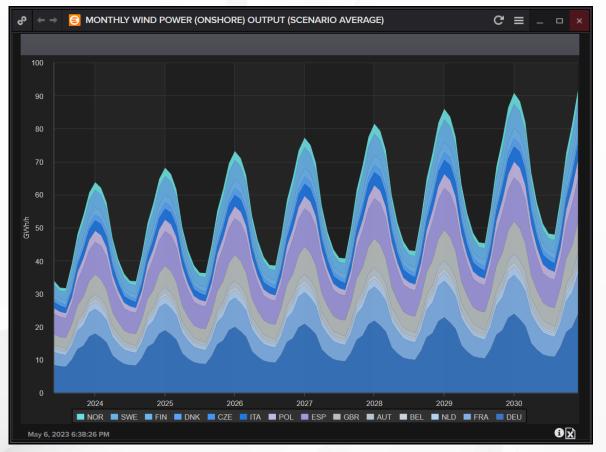
We use Refinitiv Power team's Forward model for gas for power consumption forecast, which now includes the demand destruction. Our forecast indicates a small increase in gas for power in NWE in SUM23 from SUM22. This is supported by the phase-out of German and Belgium's nuclear and drop SRMC of gas compared to coal. On the other hand, French nuclear availability is healthier and renewable availability is stronger. UK gas for power saw the lowest average winter consumption level with increased renewable capacity despite record exports to France. This summer is expected to remain low with a return to net power imports from France and continued demand destruction.





Renewable capacity increases

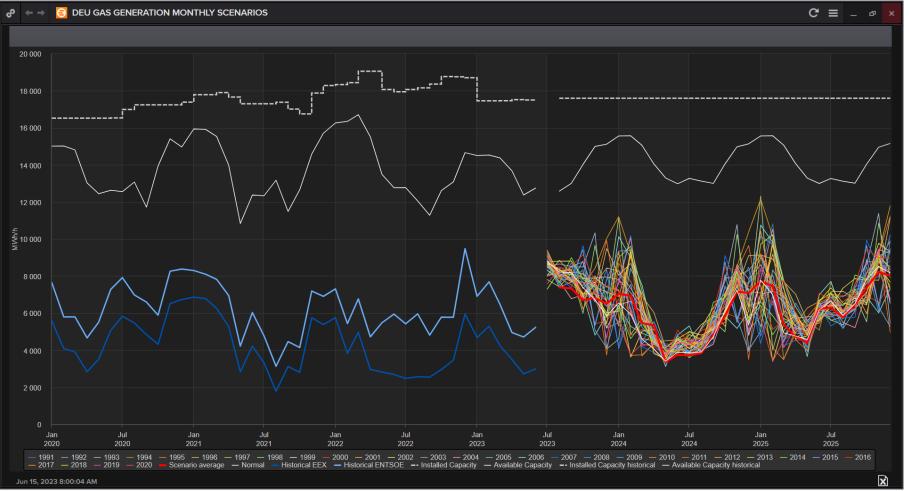






Coal to Gas switching

After months of coal-to-gas switching, the moment for lignite-to-gas switching arrived in Germany. In recent weeks, we have seen significant changes to the German merit order, efficient gas-fired power plants replacing some lignite-fired plants in the "cheap" portion of the merit order, leaving lignite-fired generation running below 40% of its available capacity on sone days. Low gas prices have also made gas-fired plants in the neighboring countries more competitive, leading to record high power net imports to Germany in recent weeks at over 14 GWh/h in some hours.

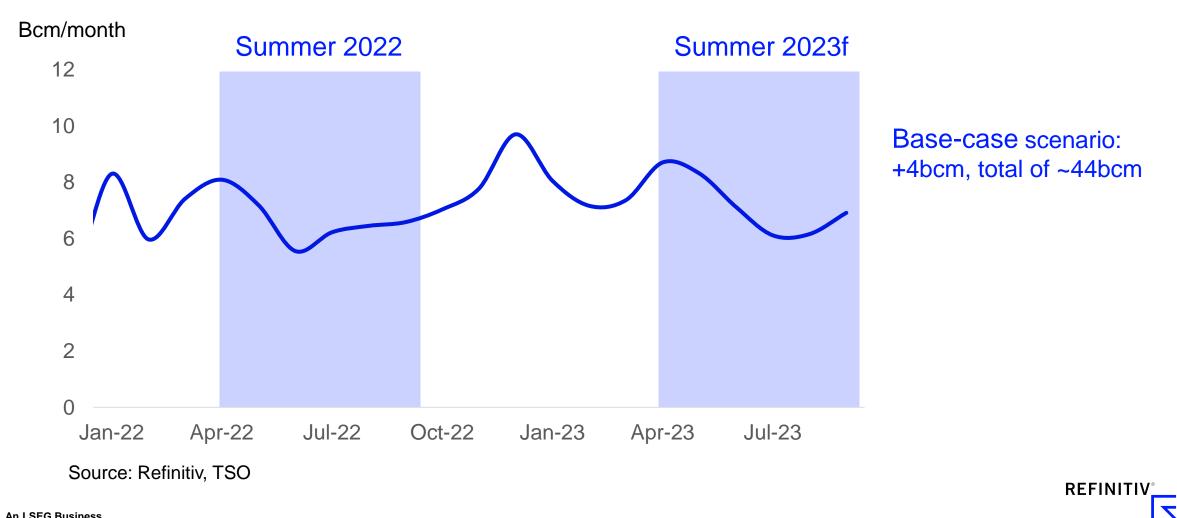


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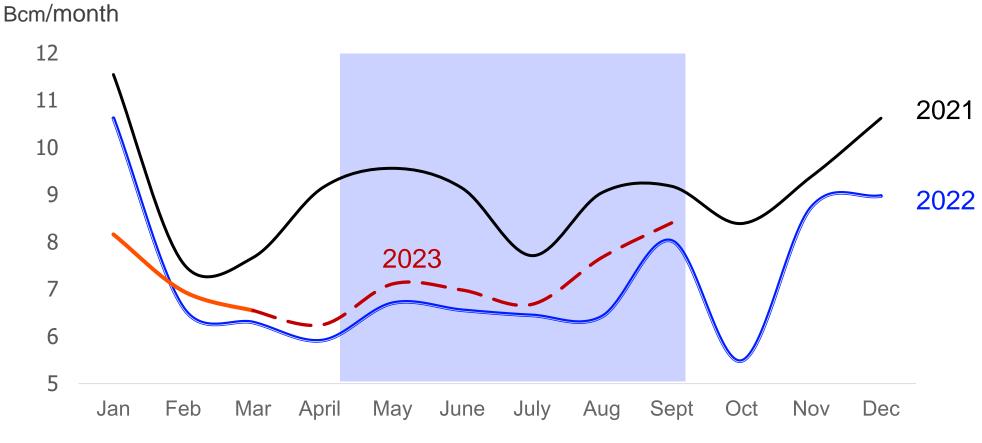
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Cargo arrivals to NW Europe: forecast for summer 2023

Base scenario – could see an increase of 4 bcm



Chinese LNG imports expected to recover – up 3 bcm or 7.5% YoY



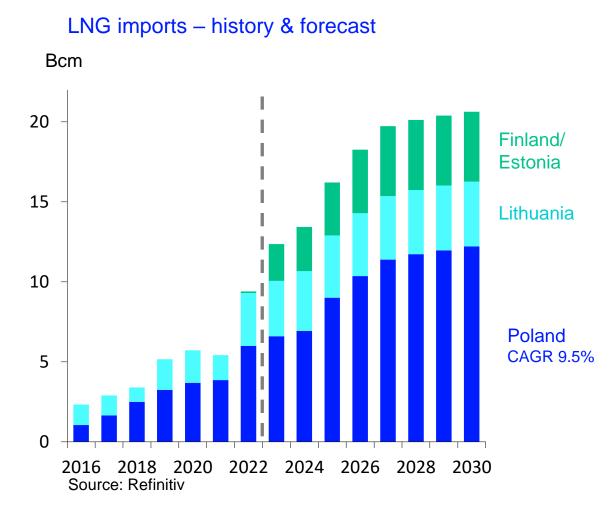
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Source: Refinitiv, Chinese Customs, Flows data

Central/East Europe

The loss of Russian pipeline supply and coal-to-gas switching provides upside to LNG demand



Poland

 Poland is heavily reliant on coal but will focus on switching to sustainable alternatives, including gas, over the coming years. This supports growth in gas demand and aligns with the country's ambitions to increase LNG import capacity

Lithuania

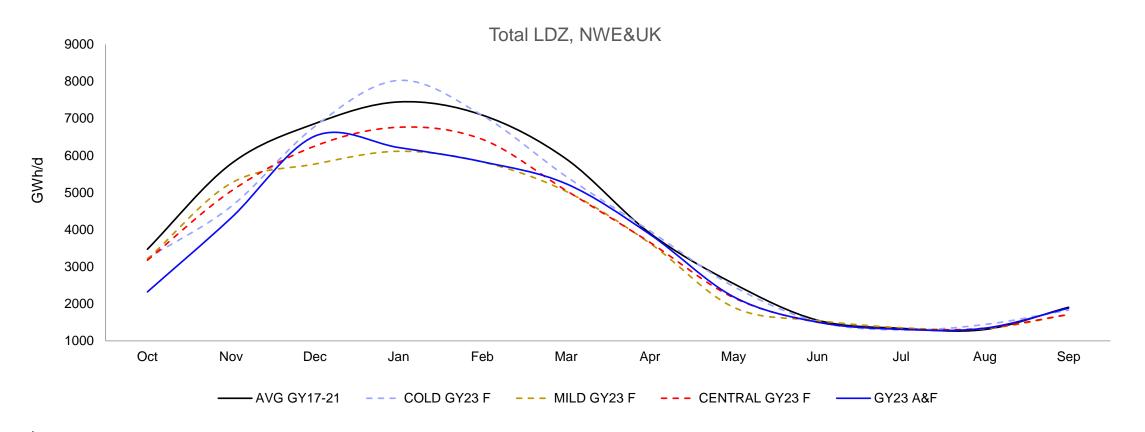
 Following the loss of Russian pipeline gas supply, there is an increased reliance on LNG

Finland / Estonia

 A joint operation between Finland and Estonia to acquire a new FSRU located at the Port of Inkoo will support demand following the loss of Russia pipeline supply. Seven cargo arrivals already this year. Eesti Gaas has made agreements with LNG terminals to bring a total of ten LNG cargoes by the fall of this year – three deliveries to the port of Klaipeda in Lithuania in the winter and seven to the port of Inkoo in Finland in the spring and summer.

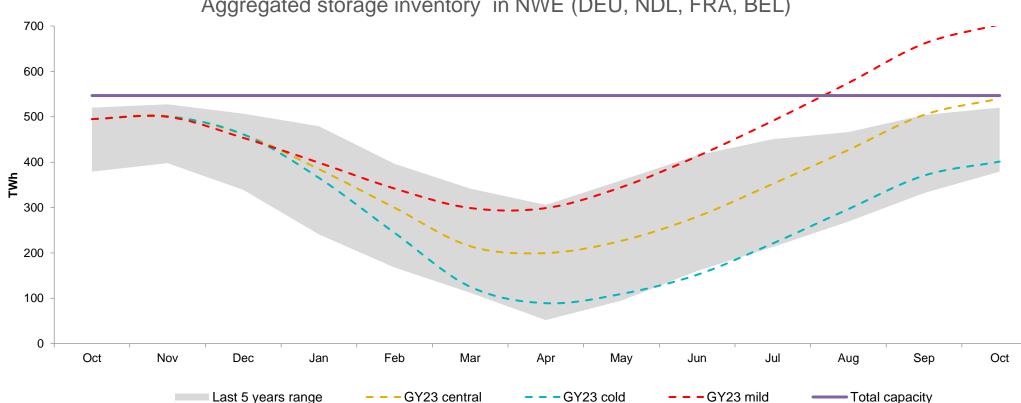
Will strong levels of demand destruction remain in play next winter?

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. CENTRAL WIN23 scenario: 10% down from average 5 years and 7% increase on WIN 22.



What to expect from WIN23?

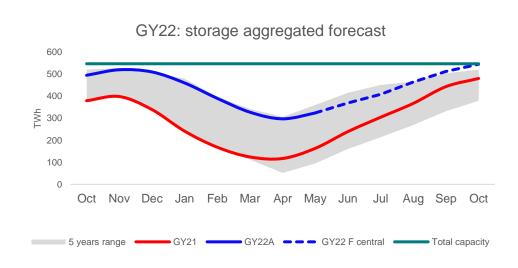
WIN22 industrial gas consumption is down by 23% from the 5-year average. In April and May this rate has slowed to 15%. With prices down will the demand destruction stay? The EU's regulation on voluntary reduction of gas demand by 15% first adopted for WIN22, got extended by a year until March 2024. As shown in the previous slide LDZ demand is expected 7% higher.

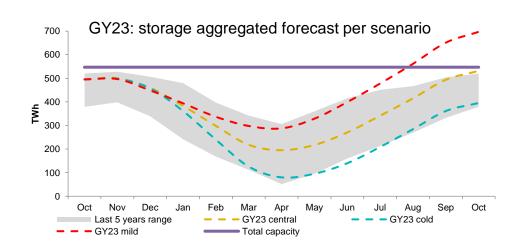


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Aggregated storage inventory in NWE (DEU, NDL, FRA, BEL)

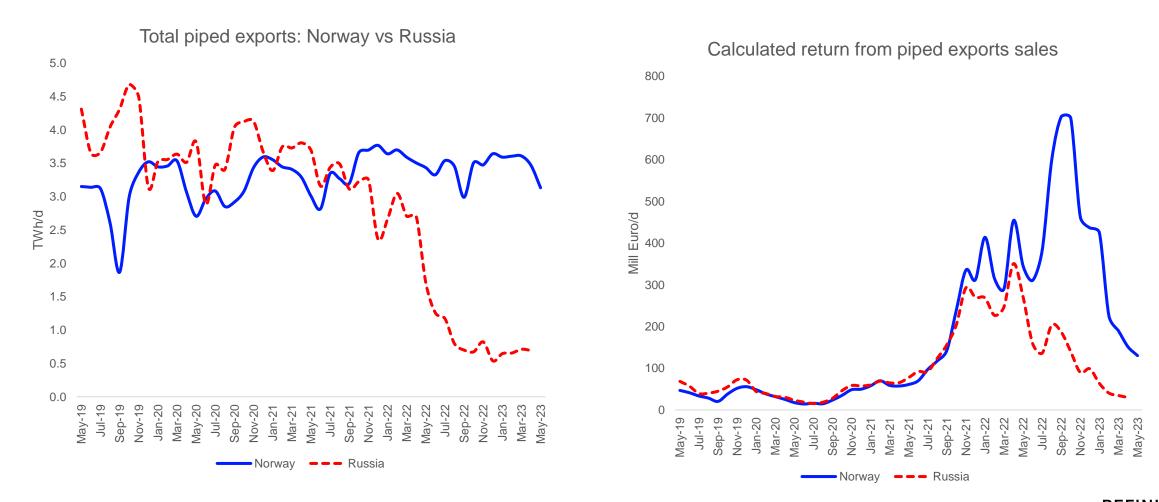
Storage Conclusion: Looking beyond June





- Our updated balance outlook for the remainder of the SUM23 indicates that if no additional flexibility is applied storages will be full by the end of September and 101% full by 1 November. This compares to 104% filling by 1 November from our previous Front Month Report.
- The important change in our balance from the last month is a small downward adjustment in LNG arrivals to NWE in July- September due to the recently announced maintenance at Sakhalin and a delay in the start-up of train 3 at Tangguh.
- Heavy maintenance in Norway seen in May continues in June keeping injections slow. However, we expect inventories to catch up with the previous record of 2020 by the end of July when Norwegian maintenance is notably light.
- Looking beyond June, we continue to utilize LDZ scenarios from our <u>Medium Outlook</u> published at the end of March. Gas for power scenarios utilizes the Refinitiv Power team Forward model, run on 22 May.
- Our balance outlook for GY23 is roughly unchanged suggesting that under the outcome of the cold scenario next winter there could be a bullish risk around low storage stock inventory. However, the outcome of the mild and central scenario does not see such risks.

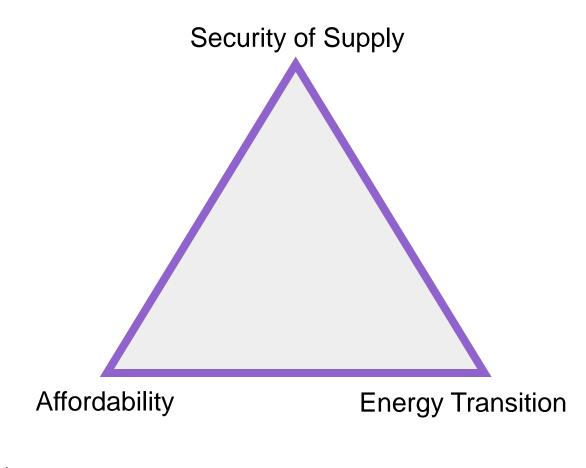
Norway: Our most reliable supplier, winning on volumes and profits ©



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The "Energy Trilemma" - a complex re-balancing act

Amidst the energy crisis - governments find themselves in a demanding situation



- Amid the high spot price environment, governments are struggling with the complexity of re-balancing the energy trilemma
- Significant difference in how governments are approaching the trilemma

Conclusion

- 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.
- Europe did not freeze without Russian gas as Mr. Putin might have hoped for. But this came at a high price in the form of excessive energy bills and the worst energy crisis Europe has ever seen resulting in millions being unable to heat their homes.
- Energy infrastructure concerns remain a risk, NATO established a Critical Undersea Infrastructure Protection Cell to improve cooperation with the industry.
- 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.
- We do not see any risk for European storage not being filled to the required 90% by 1 November.
- 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 weather conditions in both the Atlantic and Pacific driving that. 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 demand.



Kiitos for your time 🙂

