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Natural Gas

The end of an era

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- The indefinite reduction in NS1 exports to zero leaves NW Europe markets to balance without any Russian gas going forward. And while we often hear the question of what this will do to storage, we believe a better approach is to ask what this will do to prices, so that storage continues to build as needed. This is the puzzle Europe has successfully solved for the past year, with a combination of gas demand destruction within Europe and across LNG buyers elsewhere in the world, resulting in above-average inventory builds, consistent with our above-90% full storage expectations for end-Oct22.
- Accordingly, we maintain our view that, while at higher levels than what we expected previously, TTF prices will decline sequentially through winter, likely dropping from 215 EUR/MWh this Bal Summer (vs our previous 176 EUR exp., and 205 EUR fwrds.) to below 100 EUR/MWh in 1Q23, well below current forwards at 213 EUR, under an average winter weather assumption. To be clear, as we go through winter, we expect the high storage levels at the start of the season to accommodate larger-than-average storage withdrawals, still leaving over 20% of full by end-Mar23. This in our view will set the stage for the sense of urgency to destroy demand we see currently to be gradually replaced by a sense of market relief for having made it through winter.
- With interventionist policies announced so far prioritizing capping energy costs over curtailing demand, the concern is always that such measures end up incentivizing higher energy consumption, thereby making the gas deficit worse. Importantly, the proposals for the UK and the EU still imply energy costs up yoy, suggesting price-driven consumption savings would still occur this winter. However, this argument would not hold into Sum23 when, for example, an electricity price cap at 200 EUR would mean power would be cheaper yoy, a clear incentive to higher power and, hence, higher gas demand.
- This poses a tightening risk to our 2023 balances, which already look challenging. Specifically, with Russian flows at zero from the start of the year, rebuilding storage in 2023 becomes that much harder vs 2022, requiring incremental demand destruction. This leads us to raise our Sum23 TTF prices to 235 EUR/MWh, from 153 EUR previously, vs forwards at 184 EUR.

The end of an era

Following Gazprom's decision announced Sep 2nd not to restart the NS1 pipeline, statements by the Kremlin tying gas flows to Western sanctions on Russia lead us to assume NS1 at zero as our updated base case going forward. This leads us to raise our TTF forecasts in line with the price risks we highlighted in our previous note, as additional demand destruction will be required to manage storage going forward, compared to a NS1 at 20% scenario. Accordingly, we lift our Bal Sum22/Win22-23/Sum23 TTF forecasts to 215/94/235 EUR/MWh from 176/86/153 EUR previously, vs forwards at 205/213/184 EUR.

NW European storage will reach over 90% full this summer even as Russian supplies halt

Our revised price forecasts are in line with the zero-NS1 scenario we published previously, and are consistent with our end-Oct22/end-Mar23 NW European storage expectations reaching above 90%/20% of full. Specifically, our updated supply numbers for Sep/Oct only reduce net Russian flows slightly vs our previous (conservative) expectations, while we expect TTF prices sustained above 200 Eur for the remainder of summer to continue to attract LNG at or above the high rates we've seen recently, leading us to modestly increase our Sep/Oct expected LNG imports into NW Europe by about 20 mcm/d to 190 mcm/d (conservatively still below month-to-date imports at 218 mcm/d) (Exhibit 1). In addition, we expect these elevated price levels to help sustain price-driven demand destruction that the August rally likely started. While early in the month, high-frequency data for the UK/Belgium/France point to a steeper drop in demand relative to average at -24% vs August at -20%. On net, our revised Sep/Oct assumptions take our end-Oct22 storage expectations marginally higher to 93% of full vs 91% previously.

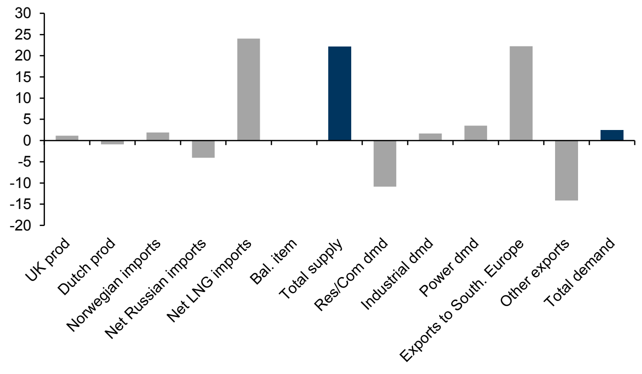
It's a good thing Europe built this much storage in summer, as winter will bring outsized withdrawals in the absence of Russian supply

During the winter, however, we expect this slightly higher storage buffer to be fully utilized owing to the impact of zero Russian flows to the region (which yield a -18 mcm/d flow on a net basis owing to German re-exports to Czech/Switzerland). To be clear, we lower our expected net Russian supplies by 25 mcm/d, which is only partially offset by our 12 mcm/d downward revision to demand, once we take into account higher assumed NW European pipeline exports to Italy (Exhibit 2). On net, we expect NW European storage to finish the winter at 22% of full assuming average winter weather, slightly below our previous expectations at 23%.

Demand destruction remains key to the European gas market rebalancing

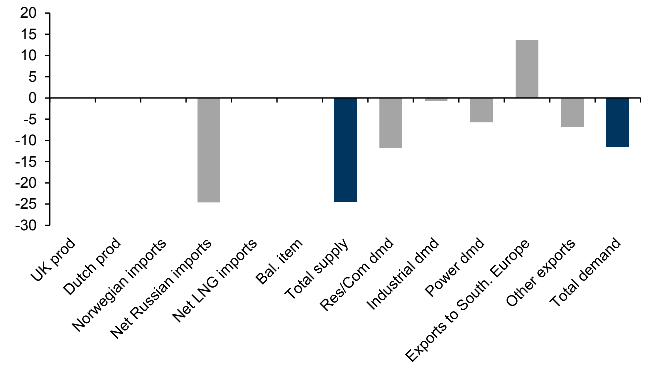
Our NW European consumer demand assumptions through the end of winter embed an 11% drop vs the five-year average, with most of this reduction impacting industrial and generation demand for gas (-18% vs average, a deeper decline vs what we have observed recently) (Exhibit 3-Exhibit 6). Our expected savings in heating demand are more modest (-7% vs average) owing to a slower and more restricted pass-through of energy costs and the relatively low elasticity of heating demand expected in peak winter.

Exhibit 1: We expect high prices will continue to attract large volumes of LNG for the remainder of the summer
Revisions to GSe S&D for Sep/Oct, mcm/d



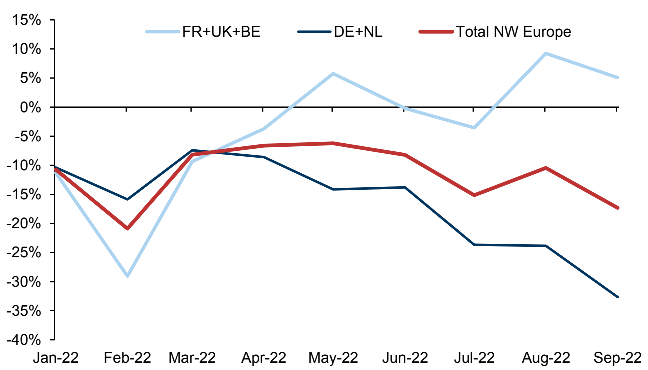
Source: Goldman Sachs Global Investment Research

Exhibit 2: During the winter, reduced Russian flows will further tighten European balances vs what we expected previously
Revisions to GSe S&D for Win22-23, mcm/d



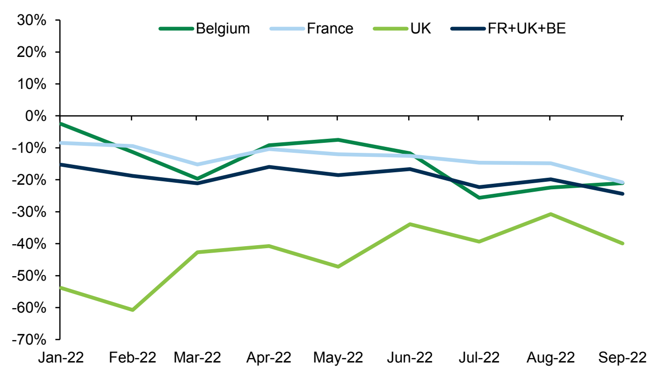
Source: Goldman Sachs Global Investment Research

Exhibit 3: This month, industrial and power demand declines vs average deepened to -17%...
Industrial and power generation demand difference vs. 5-year average, %



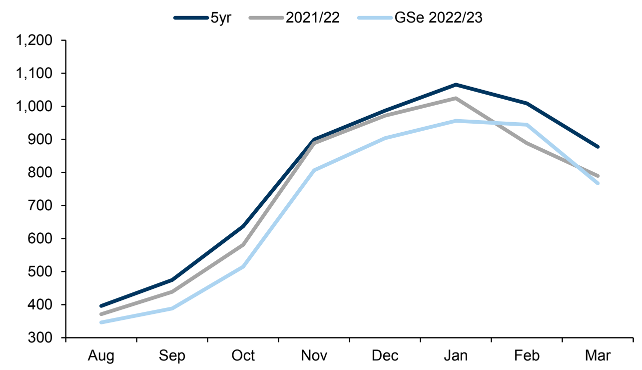
Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 4: ... with the steepest declines seen in the industrial sector
Industrial demand decline vs. 5 year average, %



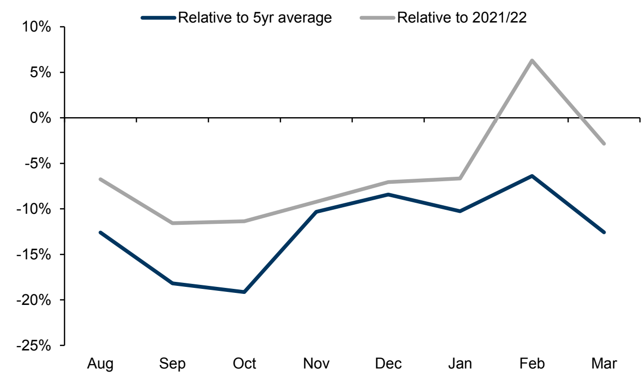
Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 5: We expect demand to remain firmly below average levels into winter...
Total consumer demand (power + industrial + res/com), mcm/d



Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 6: ...averaging 11% below the 5-year average through Mar23
2022/23 total consumer demand, relative to historical balances, %



Source: Bloomberg, Goldman Sachs Global Investment Research

On net, because of the high storage levels we expect at the start of the winter, and higher pressure we expect on residential users to save energy under this zero-Russian-flow base case (7% of heating demand savings, vs 5% assumed previously), our 94 EUR/MWh winter TTF forecast (including 4Q22/1Q23 at 144/84 EUR) is only 8 EUR above our previous winter expectations. This is the case even as we conservatively assume industrial demand elasticity 25% lower than our original estimate, with prices having to move 2.4 EUR (vs 1.8 previously) to generate 1 mcm/d of a shift in demand. While elasticity of demand observed this summer was even lower than that, with UK industrial demand even recovering vs average through most of the summer, our conversations with several European industrial consumers of gas suggest this has been mainly driven by previous hedges and fixed-price contracts, which partly start to roll off from 4Q22. In addition, as higher energy costs reach end-users more broadly, we believe it will be increasingly difficult for industrial users of gas to pass through their high energy costs downstream vs earlier this year, potentially triggering incremental shifts in gas consumption going forward.

We note that our winter TTF expectations are far lower than current prices - and lower than winter forwards. The higher the storage level at the start of the season, the easier for balances to accommodate larger-than-average storage withdrawals without threatening a stock-out. This implies a higher tolerance for lower prices vs current, and their associated higher demand. Our base case suggests that even with our expected storage withdrawals this winter 7 Bcm (22%) above average, this would still leave inventories over 20% of full by end-Mar23. This in our view will set the stage for the sense of urgency to destroy demand we see currently to be gradually replaced by a sense of market relief for having made through winter. Q1 in particular benefits from the fact that winter weather risks are much reduced vs Q4 owing to the lower duration left in winter at that point, allowing for an even lower risk premium in prices. In the absence of colder-than-average weather in 4Q, this lower weather risk perception is often priced in more visibly from late December, when the first glimpse of January is also available in the two-week weather forecast, which is typically heavily watched by the market.

While winter balances appear manageable, risks to prices remain

Although our base case is that European gas storage can last through winter under 10-year average weather assumptions, risks to the balance remain, including (1) colder-than-average weather, (2) lower-than-expected LNG imports and (3) higher pipeline exports away from the region.

1. **Weather risks.** Despite our base-case end-winter storage expectations offering a buffer against a modestly colder-than-average winter, we believe a cold spike during winter would likely still trigger a surge in natural gas prices, given uncertainty around how (and for how long) it would evolve. For example, a 1 standard-deviation (std-dev) colder than average winter, a 16%-probability event under a normal distribution, is worth almost 50 mcm/d of demand, and could in theory be offset by a 115 EUR rally in gas prices (assuming a demand elasticity 25% lower than what we observed last winter). However, during winter the market's limited ability to wait to test whether a price response would properly translate into lower demand would likely exacerbate such price response, potentially triggering government intervention, such as rationing measures.
2. **Lower-than-expected LNG imports.** While we already base-case a rebound in China LNG imports from 4Q22 to being back up yoy, we expect NW European LNG imports up 16% vs last winter, averaging 225 mcm/d, helped by higher LNG supply from new projects in the US and Mozambique vs last winter, the restart of the Hammerfest facility in Norway, and a recovery in feedgas in Trinidad allowing for higher exports. However, a colder-than-average winter in Asia or a stronger-than-expected rebound in China's economic activity could increase Asia's competition for LNG cargoes. Alternatively, LNG supply could disappoint, be it because of further delays to the start up of Mozambique's 13 mcm/d Coral LNG facility, extended outages at the 60 mcm/d US Freeport LNG facility, currently down for repairs, or outages elsewhere. Similar to a European weather shock, a sustained drop in LNG into Europe would also likely trigger a surge in gas prices and potential government intervention.
3. **Higher-than-expected pipeline exports.** Although Russian exports to NW Europe are now gone, not all flows to the EU have been curtailed, with Italy in particular still importing an estimated 25 mcm/d of Russian gas. Should this flow be interrupted - for example, as retaliation to a European price cap imposed on Russian gas - Italian gas prices would likely move above TTF to attract incremental pipeline imports from NW Europe. There's a physical limit to how much more gas Germany could send Italy, with historical data suggesting a potential 20 mcm/d increase in flows. For now, excess LNG imports into the region are more than enough to offset that, but, as we discuss above, this might not always be the case.

Interventionist policies appear to prioritize prices over quantity

An additional risk to be considered is the extent to which government policies might impact energy consumption. While details behind the recent EU proposal won't be fully available until this coming week, we caution that, depending on the impact of such an intervention on power prices, this could indirectly further tighten gas balances by incentivizing increased power consumption and, as a result, gas demand. While there have been mentions of the importance of demand reduction measures, no mandated cuts have been put in place as of yet. Similarly, the lower cap to energy bills to be implemented in the UK this winter (and for the next two years) might also keep energy consumption at higher levels than what we would have seen under a higher cap - though still likely below last winter's levels, given the significant year-on-year increase in energy costs faced by consumers.

A direct intervention on European gas prices is less likely than in power, in our view, as it could threaten Europe's access to gas supplies and LNG in particular, in addition to distorting the price incentives currently in place for much needed gas demand destruction. To be clear, the more reductions we see, especially in summer, in gas consumption, the less likely Europe is to face blackouts or lack of heating in the winter. A discussion of this topic during last Friday's (Sep 9th) press conference following the EU Energy Council meeting suggests such measures, while still on the table, and particularly when it comes to pipeline gas from Russia, are the least likely to be included in this coming week's proposals.

Instead of energy price caps, we believe that government-led reverse auctions might be a safer route, from a gas balance perspective. This would mean governments would buy back gas directly from industrial users on a voluntary basis to place in storage. As this would be a form of gas demand destruction independent of gas prices, it would help guarantee storage builds while removing the burden of the adjustment from prices, ultimately driving gas and power prices lower vs a scenario without auctions. Germany is implementing such a mechanism from Oct 1st, though language in the press release suggests this might be used to mitigate specific market imbalance events, as opposed to it being used in a systematic way to help manage the ongoing deficit in the market.

Next summer won't be any easier

The energy-price-cap risks discussed above might become particularly relevant next summer when, for example, a potential electricity price cap at 200 EUR would mean power would be cheaper summer-on-summer. And with our base case that Russian volumes to NW Europe remain at zero, just mechanically it follows that NW Europe will require a larger drop in gas demand vs this summer in order to manage storage to 90% full once again. Specifically, we estimate consumer demand needs to average 28% down vs average next summer, a much steeper decline compared to the -11% we expect to observe on average between now and the end of winter. Like this year, we expect most of the burden to fall on industrial and generation demand, which we expect to average 42% below average, vs heating demand, which we expect at -8% vs average.

We need all non-gas generation capacity we can get

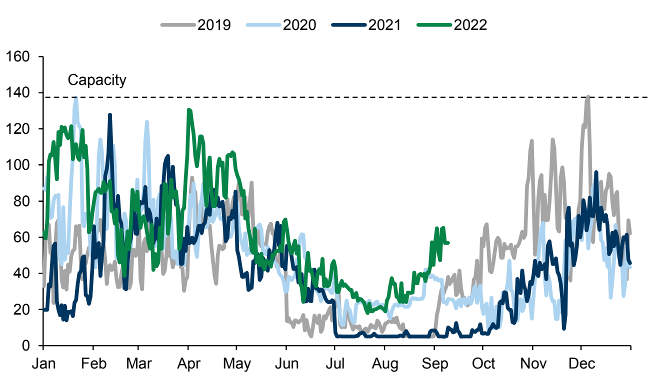
Although our demand assumptions embed Sum23 industrial and generation gas consumption down more than 70 mcm/d or 30% below observed demand last month, we note that we expect most of that decline to be driven by increased substitution away from gas and into coal and nuclear generation driven by the restart of German coal generation on reserve and the recovery of French nuclear reactors from exceptionally heavy maintenance this year. Still, this leaves approximately 25 mcm/d of consumption to be curtailed via price. Applying our more conservative assumption on elasticity of demand of 1 mcm/d requiring a 2.4 EUR/MWh move in price would suggest TTF prices would need to be 63 EUR above the observed 172 EUR/MWh July levels, taking our Sum23 TTF forecast to 235 EUR/MWh (vs 153 EUR previously, and forwards at 184).

Europe still has something going for it next year

Despite a bigger deficit to be resolved year-on-year, incremental regasification capacity in Netherlands and Germany from this winter can potentially bring additional LNG at the margin. This summer, the lack of storage capacity in the UK meant that the UK had literally no room to store LNG, which drove UK gas prices to disconnect from TTF, pricing low enough not to attract much LNG. This left UK import facilities sitting nearly empty, while Dutch facilities were maxed out and Germany was unable to import any volumes due to lack of regas capacity. The 63 mcm/d of regasification capacity to be added in the Netherlands and Germany from this winter will allow LNG to be allocated more efficiently, contributing to a narrowing of the discount seen this summer between UK NBP (and JKM prices, for that matter) and TTF.

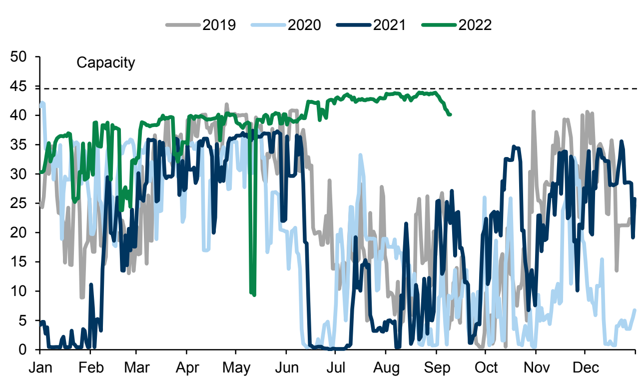
To be clear, this does not guarantee the added import capacity will be filled. Ultimately, European LNG imports are the result of its prices relative to the rest of the world, which can be particularly impacted by how much Asia is competing for cargoes. This year China was comfortable keeping its LNG imports down year-on-year owing to slow industrial demand for gas. Going forward we expect economic activity in China to gradually improve, leading its LNG imports up year-on-year throughout 2023. Net, we expect NW European LNG imports only marginally higher Sum23 vs Sum22, at 206 mcm/d.

Exhibit 7: A lack of storage capacity in the UK led to underutilization of its LNG import capacity this summer...
UK LNG imports, mcm/d



Source: Bloomberg, Goldman Sachs Global Investment Research

Exhibit 8: ... while Dutch LNG imports ran into capacity constraints
Netherlands LNG imports, mcm/d



Source: Bloomberg, Goldman Sachs Global Investment Research

A few challenging winters ahead, until LNG supplies are large enough to end this crisis

Ultimately, we believe European gas prices will only sustainably move below industrial-demand-destruction levels once global LNG supply increases more significantly, from 2025, when several liquefaction projects already under construction from the US, Qatar and Canada, among others, start to come online. Until then, Europe is left with a tight supply outlook. Specifically, UK production is in slow decline, Netherlands has signaled it's maintaining its scheduled 2023 shut down of the Groningen field, and Norway's production flexibility from reallocating maintenance events is largely exhausted, with 2023 now embedding much more significant outages vs this year. Only Algeria has guided towards gas export increases, though too limited in size to resolve Europe's current tightness, at 25 mcm/d by 2023/24. As a result, we expect European gas prices to continue to drive industrial demand destruction to help the region manage storage through 2024.

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Reg AC

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