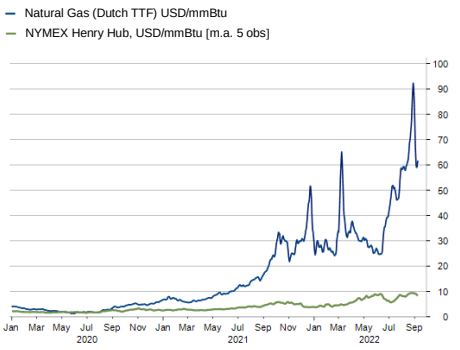
European chemicals: calm before the storm
Sector weathers gas-price shock; tougher times to come as shortages, recession loom

Europe's chemicals sector is bracing itself for reduced profitability caused by high prices for natural gas and possible supply disruptions.

Reassuringly, the European sector has entered this more extreme phase of the energy crisis brought on by Russia's weaponization of its gas exports in good financial shape, with net debt on average below pre-pandemic levels. The sector has also been quick to adapt by substituting natural gas where possible.

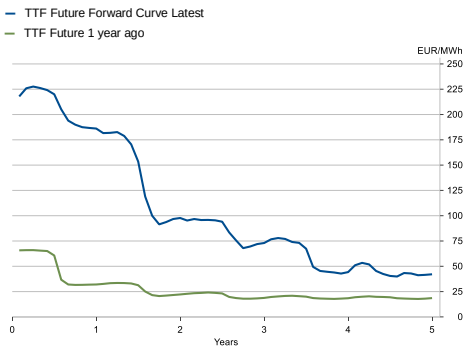
However, indebtedness is on the rise and pricing power diminished amid increasing energy and feedstock costs which put the European sector at a disadvantage particularly to US producers. In addition, slower economic growth in Europe will lead to an overall deterioration in demand, clouding the credit outlook.

Figure 1: European vs US natural gas prices



Source: Macrobond

Figure 2: European vs US natural gas futures



Source: Macrobond

Higher energy costs spill over into Europe's industrial sectors

Chemicals companies exposed through gas as energy source, feedstock

The surge in European natural gas prices predates Russia's escalation of the war in Ukraine, having risen sharply already in 2021 before reaching its peak in August this year. Prices have fallen back a little since then amid rising inventories and fears of demand destruction from a possible recession.

Near term, companies can still manage these additional costs through mitigating action. Switching from gas to oil fuels, for example, is only possible for certain production sites where alternatives for generating process heat are available such as old oil boilers or combined heat and power plants fuelled by coal, generally covering only a small portion of production. We expect reduced utilisation rates in Europe – or more frequent production stoppages – which only companies with geographically diversified operations will be able to offset with increased output at other sites.

However, long-term savings are finite for an industry that has long benefited from stable gas supplies. The US as the largest chemicals producer has had a consistent advantage from low domestic gas prices, a differential that widened considerably this year. European gas is currently 6x more expensive than the US. If we look at gas futures, it seems the market expects this to last several years before European gas prices stabilise again. Leaving aside immediate concerns about the availability of gas, higher prices creates a competitive disadvantage for European producers over time.

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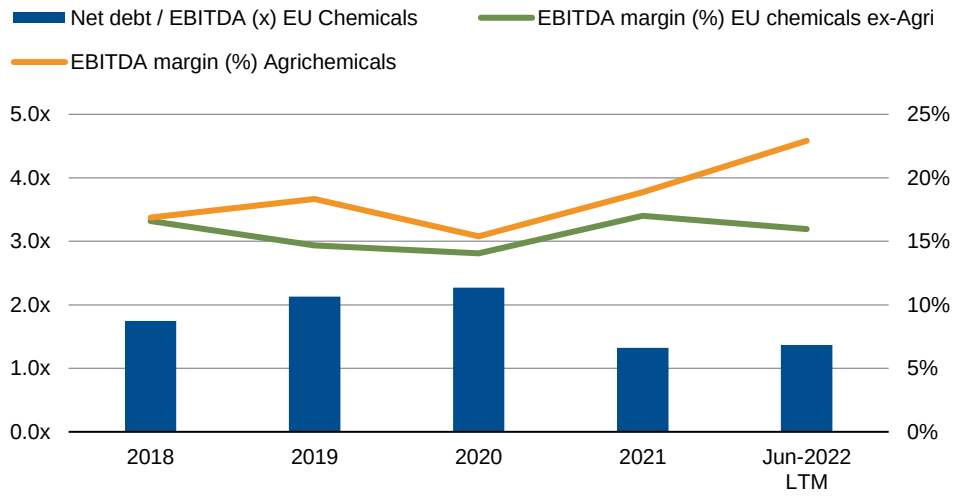
Chemical sector price hikes, cost savings help cushion shock

European suppliers pass on costs in H1

Large chemical producers started gradually and aggressively increasing their product prices last year. In doing so, they have largely been able to pass-through higher energy costs to customers at least until the first half of 2022.

During that period, European companies benefited from robust post-lockdown recovery in demand, with management quick to adapt to turbulent conditions, as first-half results demonstrated: the sector as a whole reported only a marginal softening in profitability and, in some areas such as agrichemical producers, recorded wider profit margins **(Figure 3**). Companies with predominantly commoditised products or a smaller asset base, which are not included in our sample, may have not been able to fully pass on higher prices, which generally come with a time lag.

Figure 3: European chemicals companies leverage and EBITDA margins (2018-22) (*)



*Based on sample of 25 large EU chemicals firms

Source: S&P capital IQ, Scope Ratings

Credit outlook darkens for European sector

Questions grow over strength of future demand

While indebtedness rose this year due to higher working capital requirements, the sector still has more headroom in terms of leverage ratios than it did on the eve of Covid-19. However, we expect industry credit metrics to deteriorate if energy prices remain high and volatile:

- The trend towards thinner margins for small commodity players is going to continue as they will struggle to keep up with price increases.
- For specialty chemicals, the question is how consumer demand will react to rising inflation and lower growth. Eventually, we expect higher prices will feed through to lower demand requiring even large specialty chemicals to absorb more of the cost increases. It is difficult to predict when this may happen, but it is possible the inflection point will arrive in Q4 2022.
- Large integrated players are already adjusting their operating rates by reducing production for plants requiring large portions of natural gas. For example, Covestro recently revised its energy bill for 2022 to EUR 2.2bn vs. from EUR 1.5m only 6 months ago, which means costs more than doubled compared with 2021 (EUR 1.0bn) and almost quadrupled compared with 2019 (EUR 0.6bn).

The European growth outlook will play a major role in determining profitability because lower demand and excess capacity risk squeezing industry margins. An exception could be end-use industries such as consumer food or healthcare that may be less sensitive.

Gas supply shortage risk and mitigating actions

Large, diversified European firms look resilient

Leaving aside the fertiliser sector, which is most exposed to high gas prices, Europe's largest chemicals suppliers – benefiting from broad product portfolios, strong balance sheets, and geographic diversity – should still be able to ride out the energy shock as governments scramble to cushion consumers and business from the worst effects.

Smaller chemical producers with operations reliant on natural gas and located predominantly in Europe are at higher risk of temporary closures. Generally, production sites outside Europe are considered less affected by the gas shortage risk, although gas prices in Americas and Asia have also increased in the meanwhile.

Even in the most extreme of the three scenarios we of higher gas prices and supply disruptions, most of the rest of Europe's large chemicals companies would pull through with only a modest deterioration in profitability and credit metrics (see **table** below).

Table 1: Snapshot of Europe's chemicals sector in 2022 gas shock
Exposure to main risk factors: higher energy prices, gas shortages

	Increasing energy prices			Risk of gas shortages	
Company	Concentration of production in Europe?	Natural gas used as feedstocks?	EBITDA margins H1 2022 vs FY 2021	Material reliance on natural gas energy supplies?	Exposure to Germany
Lanxess	Yes	No	Broadly stable	No	Low to moderate
Solvay	Yes	No	Broadly stable	Yes	Low
BASF	No	Yes	Broadly stable	Yes	Material Largest Verbund plant affected
Bayer Crop Science	No	Yes	Increase	Yes (German gas for 2022 contracted already for 70%, 50% for 2023)	Moderate
LyondellBasell	No	No	Slight decline	No	Low
Covestro	Yes	No	Decline	Yes	Moderate ~25% of global production
Yara	No	Yes	Increase	Yes	Low
K + S	Yes	No	Increase	Yes	Moderate
Linde	No	No	Slight decline	Yes - but contract protection	Low
Arkema	No	No	Increase	No	No
DSM	No	No	Slight decline	No	Low

LyondellBasell: example of less gas-dependent producer

Large chemical players benefit from more diversified suppliers and a wider geographical spread of their operations, allowing them to maintain satisfactory operating rates or offset lost production in Europe with output elsewhere.

For example, at LyondellBasell – a leading producer of olefins and polyolefins – the firm's European crackers are mostly dependent oil-based feedstocks so any disruption in gas supplies would eventually only affect a limited portion of its production.

BASF faces adaptation challenge

BASF is instead facing one of the biggest challenges at its main site in Ludwigshafen (Germany), which uses large quantities of gas for power/steam but also as a feedstock

(50%). Even so, BASF, with a large and diversified asset base, is looking at fuel replacement, geographically diversifying production and using its pricing power to compensate.

Within Europe, geography also plays an important part. The severity of gas supply shortages risk depends much on which country a chemicals plant is located. Germany is the most relevant case of a country heavily relying on Russian gas supplies. Besides the earlier-mentioned BASF, some other companies with significant production in Germany, including Covestro and K+S, have calculated additional yearly costs of several hundred million euros under a hypothetical 25% cut in German gas supply, though not severe enough to disrupt their operations.

Even within Europe, geography plays important role

Conversely, companies more exposed to European countries less dependent on Russian gas and with lower prices are clearly less impacted; this is the case of petrochemicals suppliers Arkema SA, whose European capacity is concentrated in France and Belgium.

Additionally, contract protections may mitigate the risk, such as for industrial gases supplier Linde AG, benefiting from onsite contracts protecting against gas disruption or energy volatility, shifting the focus to the credit quality of the customers.

All in all, we expect profitability to remain under pressure for as long as shortages persist but see only moderate credit deterioration. As already mentioned, smaller and less diversified players with commoditised products are at the highest risk.

Disruption in businesses using natural gas as feedstock

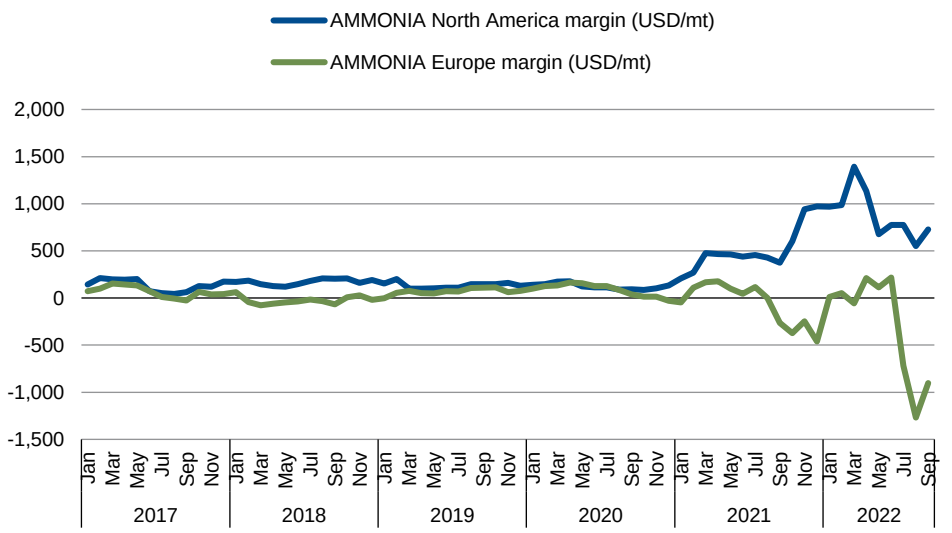
European fertiliser sector hard hit by price shock

For those chemical segments using natural gas as feedstock – including some fertilizer productions or glassmakers – current gas prices have ruined the economics of their business in Europe – or put them at a huge disadvantage versus American and Asian producers - and are likely to lead to prolonged production stoppages.

Lower demand from farmer amid exorbitant product prices have ensured that European producer are running facilities at lower rates, with selected lines halted temporarily. Leading fertiliser producer Yara International ASA has cut its ammonia utilisation to 35% in Europe, while other smaller European players have even halted production, including Hungary's Nitrogenmuvek.

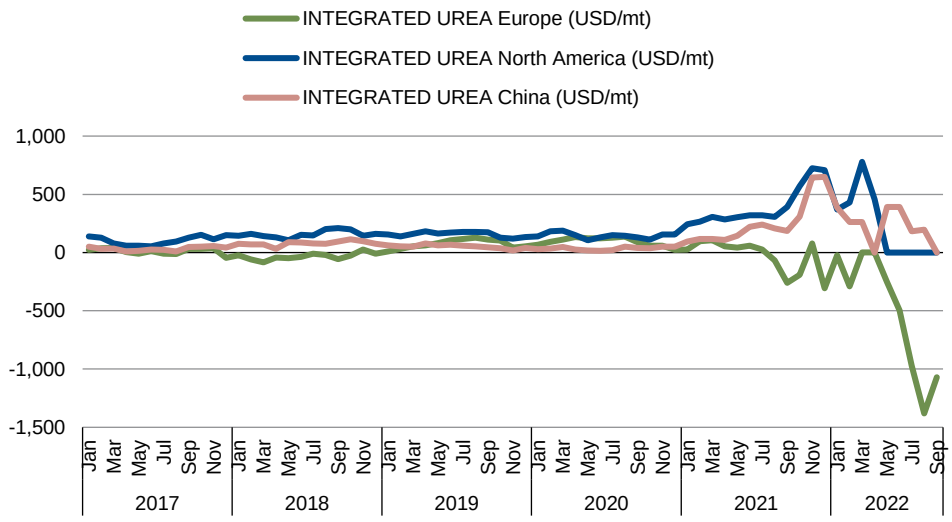
Data from Bloomberg on production margins shows the competitive disadvantage at which European-based producers are operating versus their American and Asian rivals since 2021. The charts (**Figures 4, 5**) below show the margins on Ammonia and Integrated Urea, used for nitrogen-based fertilizers, which represent the largest product group worldwide and especially in Europe (remaining fertilizer productions are based on phosphate or potash rocks).

Figure 4: Ammonia production margins



Source: Bloomberg

Figure 5: Integrated UREA production margins



Source: Bloomberg

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