REPORT

Navigating European chemicals

The ecological-economic balancing act

Roland Berger

Management summary

In the face of a major transition, the world's oldest chemicals industry must strike a balance between the economic opportunities and the ecological realities. And it must do so while navigating feedstock, energy prices, end-market development, imports, regulation, and sustainability and circularity. No small task.

The signs, however, point towards a pragmatic balance where economic and environmental realities find middle ground. The likelihood of a fossil resurgence, or alternatively of a fully green trajectory, is fairly low. Instead, we will probably see policymakers take a two-pronged approach that eases market pressure on chemicals players while introducing incentives for their transition. This will support Europe's chemicals players in the short and long run.

That being said, certain chemicals segments will fare better than others in the oncoming market conditions. Plays in specialties and consumer chemicals will be most resilient, so Europe's heavily petrochemicals base should look for ways to navigate these rather counterproductive conditions. Specialization, of course, is an obvious pivot, but players can also look closely at product-market fit and agility moves to become more responsive to their customers and the market dynamics.

Specifically, we recommend that Europe's chemicals players take decisive action now to protect their competitiveness and secure their *raison d'être*:

1. Shift toward specialty portfolios
2. Target growing end-markets
3. Embrace customer co-creation
4. Implement phased sustainability transformation
5. Build adaptive organizational capabilities

Contents

1 Introduction

Geopolitical and macroeconomic dynamics have put Europe's chemicals industry in difficult waters. Our first report in this series "Navigating European chemicals" attributes the declining investment appetite in Europe to a range of factors, from high raw material prices to poor public perception. We're seeing projects postponed or even canceled, firms restructuring, and plants being mothballed or shut down. Recently announced site closures in Germany, for example, demonstrate a wider investment shift towards the US, China and APAC instead.

There are some signs of recovery, however, at least in the mid-term. According to Cefic's latest numbers, 2024 reversed the 20-month slump in production levels. Germany, perhaps a bellwether for the broader region, also started 2024 better than expected, reaching its highest output level since July 2022. But these positives are overshadowed by persistent uncertainty about how the fundamentals will shake out in the coming years, especially in view of Europe's ambitious sustainability targets for 2030 and 2050.

This is not to say the situation is dire. Adaptations can be made at the industry and company levels to weather this storm. In "Capturing opportunities in transforming value chains", we sketched the ways chemicals value chains will be impacted and how the industry and policymakers can best respond. In this second of the series, we zoom in on the drivers disrupting chemicals firms, then consider current government, industry and societal signals to calculate where things are headed. As Europe endeavors to strike a meaningful balance between the economics and ecological concerns, chemicals companies can and must adapt to secure the future of one of Europe's most important strongholds.

> **"The European chemicals sector isn't facing extinction, but transformation. The path forward requires a pragmatic approach that acknowledges both economic realities and sustainability imperatives."**
>
> **Frank Steffen, Partner**

2 Six key drivers are changing the industry's trajectory

Europe's chemicals industry is the region's largest manufacturing sector, with sales reaching EUR 760 bn in 2022. It is also the world's oldest chemicals industry, possessing a sophisticated and well-connected infrastructure of pipelines, refineries, crackers and downstream assets across the region. However, this history also translates into aging assets; for example, the average age of crackers in Europe is 49 years, compared to China's 18.

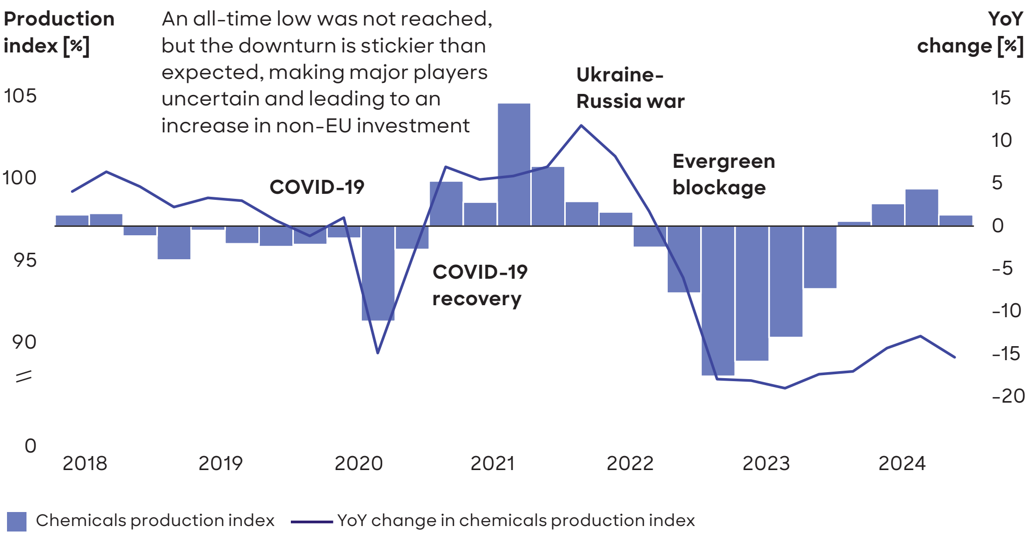
For some time, chemicals players have had to weigh the benefits of investing back into existing infrastructure against shifting those investments to more economical regions. But we are now also seeing a more complex balancing act at play. It is no longer simply a question of maintaining and continuing a longstanding industry. Recent geopolitical and macroeconomic developments have exposed a more fundamental transition, one that calls on chemicals companies across Europe to closely and carefully examine their raison d'être.

We have pinpointed six key drivers that are disrupting European chemicals. Alone, each may affect a company to some degree, but combined these drivers are shifting outlooks and priorities in chemicals at a fundamental level.

FEEDSTOCK

The primary feedstock in Europe's chemicals industry is crude oil – a costly import. A series of events, including the Evergreen incident in the Suez and Russia's war on Ukraine, have multiplied crude oil prices and put pressure on the industry's margins. Even though costs can be passed on to customers, competition from the US, China and the Middle East – areas with readily available crude oil or ethane – has inevitably shifted demand away from Europe. We are seeing this in production numbers, which fell into negative territory – and stayed there – after a brief post-pandemic recovery. ▶ **A**

A EU-27 chemicals production indicators, 2018-2024 [2015=0; %]



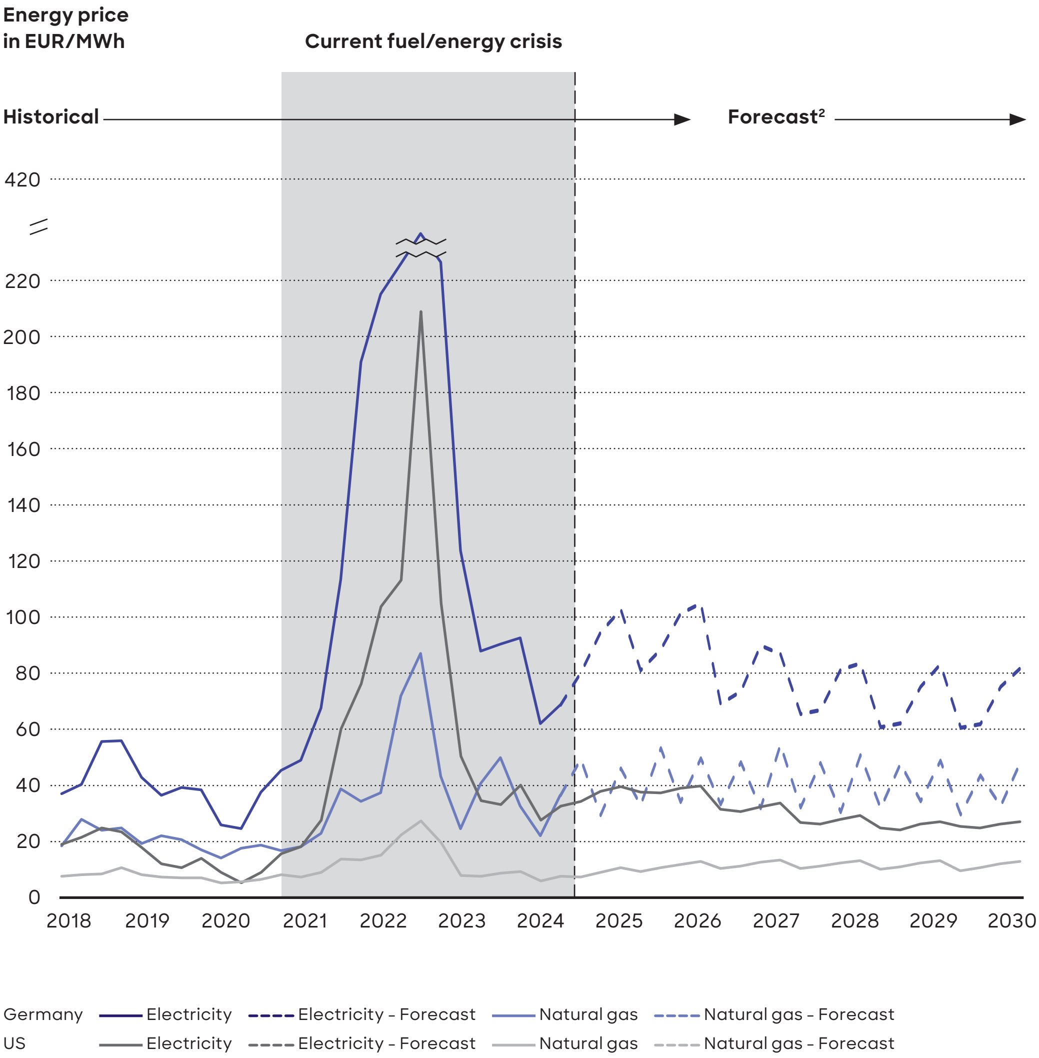
Source: Cefic, Press articles

ENERGY PRICES

The soaring energy prices of 2022 in the wake of Russia's war have dropped and seem to be stabilizing, but remain a challenge for European chemicals production. Europe's industry is centered around base chemicals, whose processes, like electrolysis, require high amounts of energy. This gives Europe a structural disadvantage against regions where the chemicals industries lean more towards pharmaceuticals and specialties, which are not as energy-intensive, or regions where oil and gas are cheaper or more readily available.

Both gas and electricity prices are expected to stay at higher levels for some time. The price gap between Europe and the US will persist, as will investments and customers leaving Europe. ▶ B

B EU-27 chemicals production indicators, 2018-2024 [2015=0; %]



¹Price references use Germany as proxy: ICE Endex's "German THE Natural Gas Futures", CME Group's "German Power Baseload Calendar Month Futures – Quotes", Nymex gas swap, ERCOT South 345KV Hub Time Off-Peak

²Forecast based on status of June 2024 figures

Source: Cefic, Press articles

END-MARKET DEVELOPMENT

Because 70% of Europe's chemicals production is also consumed in Europe, the industry relies heavily on how its local end-markets develop. Established end-markets like automotive, construction and consumer goods are not expected to see significant growth over the coming five years, and in a real sense this pressure is expected to stick around. Automotive, for example, will continue to move abroad, and construction will keep limiting capacity additions.

IMPORTS FROM OUTSIDE THE EU

Domestic producers are under pressure from countries like China and India, which have been exporting their oversupply to Europe. China, for one, has decidedly overtaken Europe as the lead chemicals seller, now holding 44% of the global market share. Its subsidized, and therefore low-cost, products are not yet subject to a tariff regime in Europe, and so are pushing out local industry. Europe has not enjoyed similar subsidies, especially in commodities, and will thus continue to face a long-term cost disadvantage on the global stage.

REGULATION

The European chemicals industry is subject to a range of EU and national regulation: Sweden's Right to Repair legislation, the European Green Deal, REACH and the PFAS ban, to name a few. These regulations mean that companies must repeatedly assess whether to invest in compliance, challenge legislation, or do nothing and face the penalties. Each of these options inevitably comes with higher costs.

We are seeing some deceleration in the regulatory burden, however. Certain bans, such as those on TiO2 and glyphosate, have been reversed through the European Court or legislation, bringing a measure of relief to cost levels. But the generally higher costs involved in navigating the regulatory landscape look to be long term, if not structural.

SUSTAINABILITY AND CIRCULARITY

One regulatory sphere that particularly impacts European chemicals is that of sustainability and circularity. For example, the EU's Fit for 55 plan aims to cut greenhouse gas emissions by 55% by 2030 relative to their 1990 levels. Chemicals companies already have several decarbonization projects underway, but it remains to be seen how companies weigh the external incentives from regulation, positive or negative, against their own goals for the energy transition.

3 Signs are pointing towards a pragmatic balance between economic and ecological goals

To help pinpoint the best way forward for chemicals players, we have sketched three scenarios for the future of European chemicals, and examined current trends and tendencies in government, industry and society to determine which of the scenarios is most likely. All indications point towards a balancing act – a careful give and take between the economic considerations and the goals of the energy transition. ▶ C

C Scenarios for the future of European chemicals

Scenario	1 Resurgence of fossil-based chemicals	2 Focus on environmental concerns	3 Economic and ecological balance
Description	Global competitiveness of European chemicals and low production costs gain priority of policymakers over the environment Green Deal modified to match US and China GHG policies – Punitive regulations scrapped and incentives kept CCS gains relevance as decarbonization route while progress of circularity, synthetic and biobased solutions slows down	Regulation prioritizes environment over ease of doing business – Green Deal is strict Incentives allocated almost exclusively to renewable energy and circularity, fail to provide adequate support to base chemicals players About 50% or more of capacity for petrochemicals and fertilizers at risk of decommissioning by 2035 due to low utilization caused by competition with imports	Economic and social pressures lead policymakers to take a pragmatic approach – Punitive regulations watered down, incentives cover broader range of technologies Petrochemicals and base chemicals use incentives to decarbonize, securing supply chain for consumer and specialty chemicals and enabling their decarbonization Subsidies for supply chain resilience ensure minimum levels of local production of fossil products, e.g. fertilizers, despite low economic feasibility
Impact on chemicals economics – **Short term**	↑	↘	↗
Impact on chemicals economics – **Long term**	↘	↘	↗
Likelihood			

↑ Positive outlook ↘ Negative outlook

Source: Cefic, Interviews with market players, IPCC, EU

SCENARIO 1 - RESURGENCE OF FOSSIL-BASED CHEMICALS

The least likely scenario for Europe's chemicals industry is a resurgence of fossil-based products. Here, lawmakers would prioritize domestic competitiveness and productivity over environmental concerns, setting policy accordingly. Base chemicals would gain new protections as politicians hone in on the economics that hurt the industry; assets and investments would stay in Europe, and tariffs would be introduced to protect local revenues. The Green Deal might retain positive incentives but see penalties scrapped and circular, synthetic and biobased solutions could be shelved in favor of carbon capture.

Importantly, this scenario would rely on OPEX, like feedstock and energy prices, to stay competitive and within range of other regions like the US – for example, a crude oil price below USD 60 a barrel. The consumer market would also have to show that, despite saying it will pay for more sustainable products, when it comes down to it, it is the cheaper products that people buy.

This scenario does not seem likely. The EU will not pedal-back decarbonization regulations significantly, if at all, and there are enough national-level protections to ensure Europe stays on its sustainability trajectory. While the impact of such a scenario would undoubtedly help the chemicals space in Europe in the short term, neither the EU nor its citizens will tolerate industries that do not act on the threats of climate change.

SCENARIO 2 - FOCUS ON ENVIRONMENTAL CONCERNS

The second scenario reflects a strong pivot to decarbonization and green chemicals. Strictly adhering to the Green Deal, the EU and national governments would introduce policies to drive out high-emissions chemicals and accelerate the transition to net zero. Legislation would forego carbon mitigation efforts such as storage and credits in favor of decarbonization itself.

In the meantime, regulatory and financial incentives would support the transition to green chemicals, including intermediates – resetting the value chains across the chemicals landscape. Such moves would put about 50% of European base chemicals and fertilizer assets at risk of decommissioning as early as 2035, as imports overtake local supply.

While the ideological push towards decarbonization and greenification is strong, this scenario is only slightly more likely than scenario 1. For chemicals in particular, neither the short-term nor long-term outlooks would be desirable. The speed and depth of such intervention would be impossible for the chemicals industry to match. The chemicals transition will take time, money and considerable effort, and will require support as its new green solutions will contend with fossil-based competition for some time.

SCENARIO 3 - ECONOMIC AND ECOLOGICAL BALANCE

The most likely scenario is that lawmakers take a pragmatic approach to balance the economic and environmental pressures. Here, punitive regulations will be watered down and decelerated. Incentives will cover a broader range of technologies and decarbonization efforts, supporting Europe's chemicals stronghold while also laying the groundwork for the future. We can expect to see subsidies that buttress the supply chains of legacy chemicals such as petrochemicals and fertilizers, helping them decarbonize while simultaneously keeping their local supply healthy. Independence from other regions will take a central role and set the stage for an ecosystem of green chemicals, particularly in the consumer and specialty spaces.

This two-pronged approach – easing pressure on chemicals players and introducing incentives for their transition – will have a positive impact on European chemicals in the short and long term. Recent moves signal that this balanced approach is also the most likely way forward. Take, for example, the EU Court's 2023 ruling to strike down harmonization of titanium dioxide classification, and the EC President's 2024 decisions to ease regulations around pesticides and PFAS.

> **"While base chemicals face structural challenges in Europe, specialty and consumer segments offer fertile ground for innovation and growth. The industry's future will be built on value, not volume."**
>
> **Christian Lumpe, Partner**

4

Specialties and consumer chemicals will be the most resilient to future market conditions

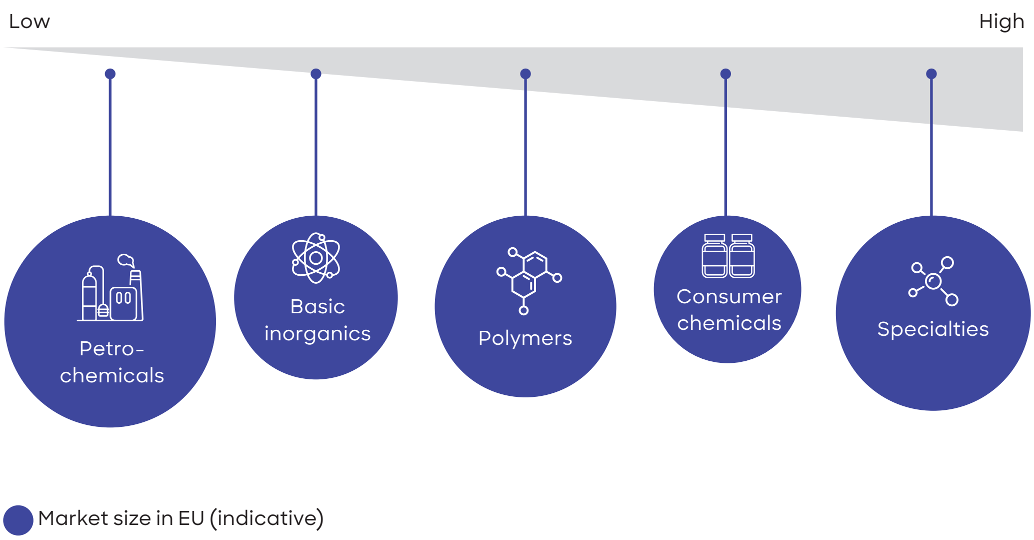
Clearly, market conditions will continue to put pressure on the chemicals space in Europe, but certain segments will fare better than others. As we saw in our previous report, value chains will be resilient, disrupted, broken up or bolstered, and these effects will determine the direction of European chemicals at all levels. Specialties and consumer chemicals will be best positioned to withstand the headwinds, while European strongholds in base chemicals will have to adapt. ▶ D

Specialty chemicals, such as battery materials and specialty surfactants, have two key advantages on the market: they are application-specific and application-critical. This means that specialties can be priced on their value, rather than on costs, and the risk of their replacement is low. Consumer chemicals' advantage comes from their heavily localized demand, which results from a combination of high regulatory hurdles in the consumer goods space and the segment's inherently complex supply chains.

The resilience of polymers and basic inorganics follows a similar logic. The differentiation potential of specialty-grade polymers will put that end of the segment in the advantage, but commodity polymers will struggle to stay competitive. And while basic inorganics can rely on local demand, they are also heavily influenced by feedstock and energy prices.

The challenge for Europe, however, is that petrochemicals occupies a large share of the region's chemicals industry, and petrochemicals will not be very resilient to the oncoming market conditions. This segment is characterized by low differentiation and an elevated (and as we have seen, rising) cost base, making its products both replaceable and expensive.

D Resilience levels in Europe's chemicals segments



Source: Cefic, Interviews with market players, EU

5

Specialization, product-market fit and agility will support European chemicals going forward

Despite the changing landscape, we do not expect the chemicals industry to leave Europe soon. In fact, three key fundamentals will continue to support the industry as a strong backbone of the region:

- **Reliable end-markets:** Longstanding chemicals end-markets like construction and consumer goods will recover and stabilize, and emerging end-markets like batteries will continue to see strong growth.
- **High diversification:** European chemicals' inherent diversification across end-markets will buffer the industry against isolated business cycles and demand volatilities, underpinning a certain stability in demand.
- **Normalizing costs:** After peaking in 2022, electricity and gas prices have dropped and are steadying out, and efforts towards energy independence, especially around renewables, will add some amount of buffer against global energy volatility.

As the industry's foundations stabilize in the mid-term and Europe strikes a necessary balance between the economics and the environment, chemicals companies can take important steps to secure their future competitiveness. In our previous report, we discussed six measures chemicals players can take to protect and reinforce their value chains. Here, we highlight three key moves companies can make to protect and reinforce their *raison d'être*.

SPECIALIZATION

We have already seen that the more specialized chemicals segments will be more resilient to the oncoming market conditions. It follows, then, that companies with more specialized portfolios will be in a better position to succeed in the changing market. Unlike the cost-driven commodities, where green solutions will face higher barriers, specialized chemicals can rely on a certain amount of customer lock-in. With specialization, too, companies can focus on the "value play" of their products, which they can price on their perceived value rather than on costs. Value-play products will retain their competitiveness no matter the structural deficiencies in the industry. ▶E

Importantly, establishing a strong base in specialties and consumer chemicals opens the door to a faster transition to sustainable feedstocks. Demand for green chemicals will move faster and be more robust in these segments, and Europe has the asset base to meet that demand. With probably one of the most technologically advanced and best maintained asset bases in the world, Europe can outsource simpler production steps to lower-cost countries and repurpose and redirect its own asset base to serve the higher-value – and greener – chemicals in the supply chain.

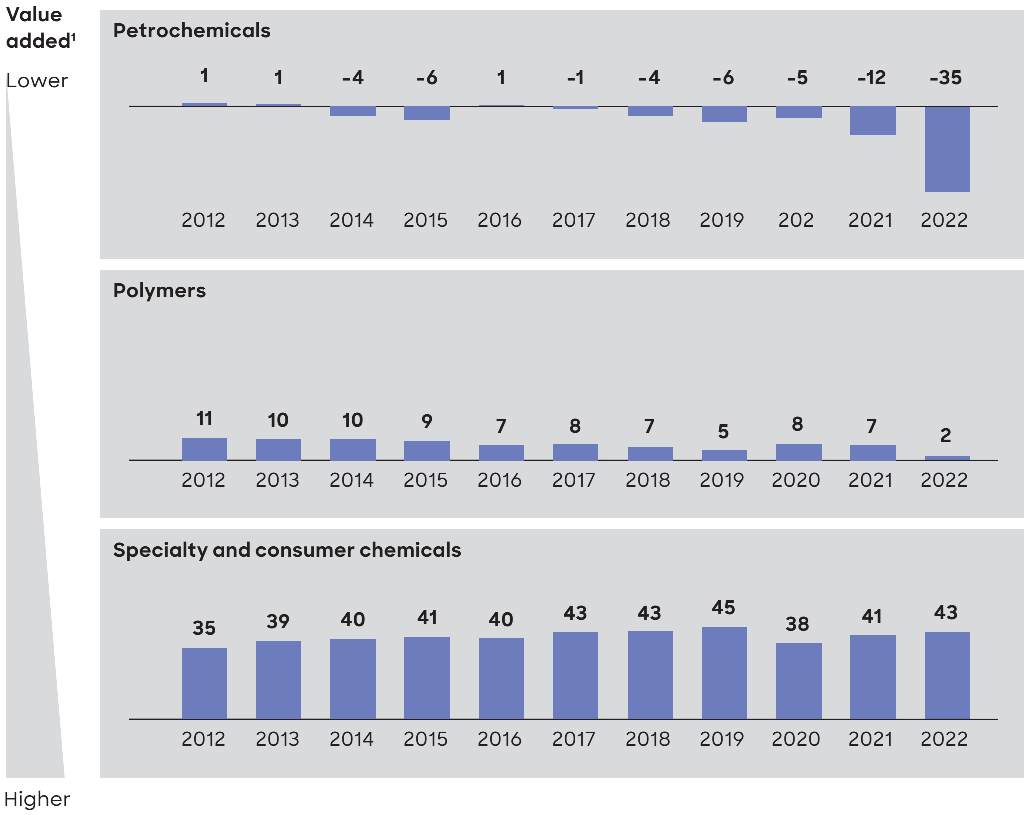
PRODUCT-MARKET FIT

A more value-play approach also applies to the customers of chemicals companies. While we are seeing traditional chemicals strongholds like automotive and construction stabilize, the end-markets projected to see the most growth over the coming five years are precisely those markets that are more specialized: semiconductor and battery manufacturers, pharmaceuticals, and to some degree consumer goods. By centering or recentering activities around specific end-markets where demand is strong or on the rise, chemicals firms can benefit from their growth. Chemicals and materials for sustainable products for the electrification push, for example, and for the growing consumer markets of personal care, pharmaceuticals and the like, are potentially some smart plays in the coming years.

AGILITY

By now it has become a cliché: things are changing fast. But it is true, and companies must be able to pivot quickly. Regulation, customer behavior and preferences, and supply chains, not to mention hard-to-predict local or global events, can change the playing field at a moment's notice. Chemicals companies that are agile from top to bottom, which can handle external changes and disruptions rapidly and efficiently, will not only be more likely to survive, but also to succeed.

E Trade balance for selected European chemicals segments, 2012-2022
[EUR bn]



[1] Per unit

Source: ICIS, ECSPP, Roland Berger

6

Recommendations

As Europe's chemicals landscape evolves, companies must take decisive action to secure their competitive position. Based on our analysis, we recommend five strategic imperatives. By pursuing these recommendations, European chemicals companies can navigate the challenging waters ahead while positioning themselves for success.

1. **Shift toward specialty portfolios:** Accelerate portfolio transformation toward specialized, difficult-to-replicate products where value-based pricing provides insulation from cost pressures. This involves divesting or de-emphasizing commodity businesses while investing in specialty capabilities through both organic development and targeted acquisitions. Success will require substantial R&D investment and technological innovation to maintain differentiation against global competitors.

2. **Target growing end-markets:** Realign business development and innovation efforts toward end-markets demonstrating sustainable growth. Specifically, focus should shift to semiconductor manufacturing, battery materials, pharmaceuticals and premium consumer goods where proximity to customers, regulatory expertise, and innovation capabilities provide European producers with natural advantages. These markets typically demonstrate higher willingness to pay for performance and sustainability credentials.

3. **Embrace customer co-creation:** Develop deeper collaborative relationships with key customers to understand emerging needs before they become explicit market demands. Establish dedicated cross-functional teams for major accounts that bring together commercial, technical and supply chain expertise. This approach enables chemicals players to move beyond commodity supplier dynamics and toward becoming solution providers integral to customer success.

4. **Implement phased sustainability transformation:** Develop a clear roadmap for sustainability transformation that balances short-term competitiveness with long-term positioning. Consider a three-horizon approach: first, implement energy efficiency and process optimization to reduce costs; second, incorporate renewable energy and circular practices where economically viable; third, pursue breakthrough innovations in biobased or synthetic feedstocks. Align each phase with customer demands and regulatory incentives to ensure business sustainability accompanies environmental sustainability.

5. **Build adaptive organizational capabilities:** Develop organizational structures and processes designed for rapid response to changing market conditions. This includes scenario planning capabilities, modular production assets that can be reconfigured for different product streams, supply chain redundancy to mitigate disruption risks, and talent strategies focused on interdisciplinary skills. Companies should also consider forming strategic alliances to share investment costs and access complementary capabilities, particularly for sustainability initiatives requiring significant capital expenditure.

AUTHORS

Christian Lumpe
Partner
christian.lumpe@rolandberger.com
+49 160 7442222

Frank Steffen
Partner
frank.steffen@rolandberger.com
+49 160 7448665

Peter Odenwälder
Partner
peter.odenwaelder@rolandberger.com
+49 160744 4406

Ruirui Zong-Rühe
Partner
ruirui.zong-ruhe@rolandberger.com
+49 1607442191

INTERNATIONAL CONTACTS

EUROPE

Tijo Collot d'Escury
tijo.collotdescury@rolandberger.com

Ambroise Lecat
ambroise.lecat@rolandberger.com

Erwin Douma
erwin.douma@rolandberger.com

ASIA & MIDDLE EAST

Dieter Billen
dieter.billen@rolandberger.com

Slava Chak
slava.chak@rolandberger.com

Francois Castelein
francois.castelein@rolandberger.com

Ivy Sun
ivy.sun@rolandberger.com

AMERICAS

Alexander Baumgartner
alexander.baumgartner@rolandberger.com

Everett Johnson
everett.johnson@rolandberger.com

Robert Henske
robert.henske@rolandberger.com

Sid Malhotra
sid.malhotra@rolandberger.com

04.2025

ROLANDBERGER.COM

ROLAND BERGER is the only management consultancy of European heritage with a strong international footprint. As an independent firm, solely owned by our Partners, we operate 51 offices in all major markets. Our 3000 employees offer a unique combination of an analytical approach and an empathic attitude. Driven by our values of entrepreneurship, excellence and empathy, we at Roland Berger are convinced that the world needs a new sustainable paradigm that takes the entire value cycle into account. Working in cross-competence teams across all relevant industries and business functions, we provide the best expertise to meet the profound challenges of today and tomorrow.

Publisher

Roland Berger GmbH
Sederanger 1
80538 Munich
Germany
+49 89 9230-0

24-2047_REP