REACTION

Chemicals & Materials Magazine

Thirty-seventh edition

Articles include:

Global economic outlook

Building teams, supporting diversity

Decarbonizing the chemical industry in Europe and beyond

An ABC of ERP for chemical businesses

Foreword

Welcome to the 37th issue of REACTION magazine. It's been another unpredictable, rollercoaster year — with no let-up in challenges and surprises despite the waning of the COVID-19 pandemic.

I was delighted to get a close-up view of the thoughts and preoccupations of leaders from the chemical industry when I attended the Asia-Pacific Chemical CEO Forum in Singapore at the end of September. While attendees were primarily from Asia-Pacific, there were delegates from all around the world, giving a window into the mindset of the industry globally.

It's fair to say that the economic outlook is top of mind — and a concern for everyone. It seems certain that we are set for a downturn or recession in most parts of the world, with no soft landing from current volatility and further interest rate rises likely as authorities battle to keep inflation down. This is borne out in the recently published KPMG 2022 CEO Outlook, in which 86 percent of leaders believe there will be a recession in the next twelve months — even if 58 percent expect it to be mild and short.

In the US, interest rates are anticipated to top out at around 4.6 percent next year (from their current 3–3.25 percent).[1] A slowdown is expected in the States, but by 2024 conditions may be picking up again. In Asia-Pacific, it is China that dominates, and annual growth there looks set to miss targets for the first time, coming in at perhaps half of the 5.5 percent ambition.[2] This is largely a function of the zero-COVID policy, which cuts industry productivity. If that policy were to be reversed, activity and growth could pick up quickly again. It is Europe that perhaps faces the longest potential slowdown, given its demand side and commodities problems that have been significantly exacerbated by the ongoing Ukraine/Russia crisis, together with the effects of a strong US dollar. At KPMG, we're seeing a rise in demand for cost optimization and working capital advice. There is likely to be a period of belt-tightening ahead.

Then there is the oil market. One speaker at the conference observed that this might be "the calm before the storm" — even if it hasn't been feeling exactly calm recently! If Chinese productivity picks up again, this would dramatically increase demand and lead to renewed price spikes. OPEC also seems minded to push prices higher in 2023. Then we have the EU set to stop taking Russian oil from December and refined products from February 2023: but could Russia pre-empt that by cutting supplies off itself

86 percent of leaders believe there will be a recession in the next twelve months — even if 58 percent expect it to be mild and short.

[1,2] KPMG, Global economic outlook, September 2022

earlier? The G7 wants to set a price cap, but it's unclear how that will work. The market could become highly febrile and volatile.

In light of all these factors, we may see governments focusing on energy security much more than the energy transition. Seeing what emerges from COP27 in Egypt in November will be fascinating. We will have to see how much of an impact this has on national net zero goals and targets — but businesses will need to remain committed to their plans no matter what.

As the fortunes of the chemical industry broadly follow GDP, 2023 is likely to be a challenging year. The petrochemical market is already beginning to move into over-supply. Demand has remained good, but there has arguably been too much incremental capacity-building over the last 5–6 years. As the supply chain disruptions of the previous eighteen months begin to unwind and resolve, the market will likely move into surplus. We are already starting to see some major projects being put on ice.

But the industry is nothing if not resilient and has weathered plenty of difficult periods before. Good businesses will find a way through — and one area of focus for many is sure to be the circular economy. While consensus in Singapore was that the industry continues to do a poor job at articulating and effectively advertising the genuine value it brings in the global fight against climate change, there was also optimism that we will see substantial technological leaps in the drive to circularity and removal of single-use plastics before the end of this decade. To make this happen, companies in the industry will need to double down on the tremendous amount of R&D investment already happening. Government support is needed in order to help drive higher levels of recycling. We may also see new business models where chemical organizations consider active measures such as acquiring recycling businesses themselves — some forward thinkers have already taken the first tentative steps down this path.

While the immediate outlook may contain some risk, I remain convinced that the medium-term outlook for the global chemicals and materials industry is bright and that the 2020s will be remembered as a decade of incredible transformation in the industry.

I hope this edition of REACTION will stimulate your thinking wherever you are and bring you valuable insights that will help you think about the path ahead. We have an in-depth feature on the global economic outlook, featuring insights from several of our member firm economists; a very topical exploration of what makes an ERP transformation work; a detailed examination of the decarbonization agenda through the lens of the EU's 'Fit for 55' initiative; and a fascinating feature interview with Bernard Skeete, Vice President, Global Controller and PAO at Trinseo.

I'd love to hear your views and feedback — so please do get in touch if there is anything you would like to discuss or if there's a topic you'd like us to cover in a future issue.

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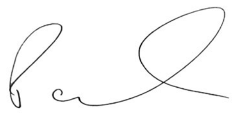

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Global economic outlook

Recession on the horizon, but hopes that it will be mild

By

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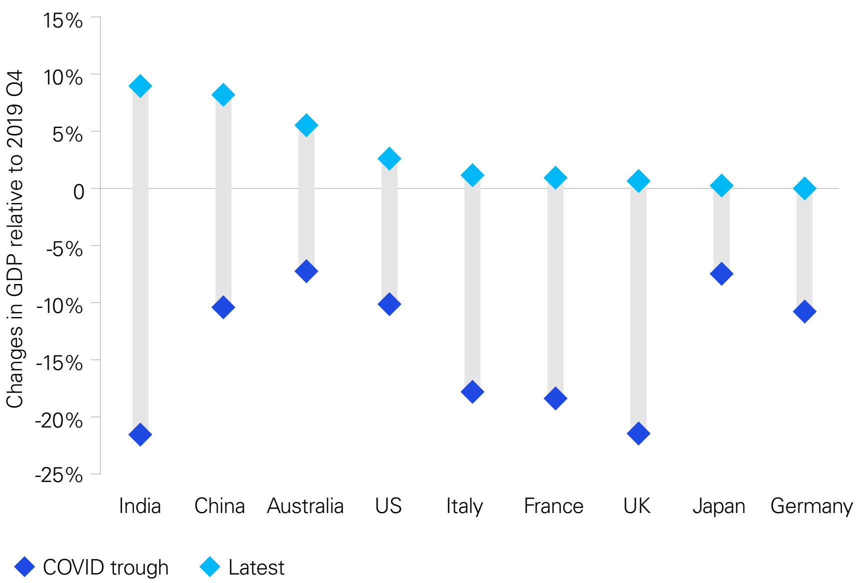
Clouds are once again gathering, marring the outlook for the global economy. As inflation accelerates, putting pressure on households' finances and businesses' margins, and causing central banks to tighten monetary policy aggressively, a recession is again on the horizon in many economies.

With the performance of the chemical sector generally tracking that of GDP, the outlook for the industry is therefore tightening too.

It was not long ago that the COVID-19 pandemic brought a big part of the economy to a halt, and while the recovery has been relatively swift once restrictions were lifted, its strength has varied across countries.

With all the new challenges this year, it is easy to forget that the virus has not yet disappeared. We could see a rise in infections over the colder months, including more disruptions to production in China due to the zero-COVID policy. The impact on labor supply and the health service is also likely to linger, causing a tighter labor market and an additional burden on public finances in the medium term.

Chart 1: The impact of the Covid-19 pandemic and the speed of recovery have been uneven.



Source: National statistics bodies, KPMG analysis.

Supply chain and geopolitical pressures

Shifting global politics and rising geopolitical tensions are changing the international order that came out of the cold war. The chemical industry is expected to continue to contend with disruptions to oil, gas and feedstock caused by a new era marked by instability. These transformations are characterized by weaknesses in global governance, a rise of conflict, and mounting backlashes to multilateralism and free trade. The rise of a multipolar, less globalized world has been accelerated by the global pandemic and the war in Ukraine.

Pressures on global supply chains have eased since their peak late last year, despite the setbacks caused by the Russia-Ukraine war. However, they remain at historically high levels, contributing to the rise in costs experienced by many producers. While we expect the weakening in global economic activity to ease the pressure on supply chains in the short term, other factors could work in the opposite direction.

With growing geopolitical tensions, more friction in supply chains could become the norm. And as labor costs rise in less developed economies and changes in production methods in some industries favor a more localized presence, there may also be less impetus for companies to seek production sites further afield, causing globalization to be on the retreat. All this could see inflationary pressures remaining more elevated over the longer term.

Although less globalization means less growth and higher inflation — as supply chains restructure, downsize and even duplicate — certain domestic producers stand to benefit from governmental efforts to localize and subsidize production in nationally strategic sectors, including the chemicals industry. Massive industrial policies have been enacted in some of the largest economies, showing more willingness on the part of governments to intervene in markets and bolster supply chain resilience, even at the cost of economic efficiency and trade liberalization.

The scarcity of workers has contributed to supply bottlenecks and more elevated inflationary pressures. As COVID-induced restrictions were lifted, demand for labor rose sharply. But the availability of workers fell in many countries, as some were affected by the pandemic while others chose to retire early. As a result, unemployment rates fell swiftly and have reached pre-COVID levels or below. This is also exacerbated by global demographic trends that will see, in the next 5 to 10 years, the retirement of the biggest generation we have ever had — the Boomers — who are not going to be replaced, in terms of productivity, consumption and investment capacity, by the much smaller Millennials' generation, and even smaller Gen Z.[1] Not all counties will face demographic collapse. Still, many economic centers, such as Germany, China, Italy, Japan, Russia and others, will need either productivity or a migration miracle to avoid a severe hit to their growth prospects.

While a weakening economic environment will likely see a fall in vacancies, the labor market could remain relatively tight over the next year.

The chemical industry is expected to continue to contend with disruptions to oil, gas and feedstock caused by a new era marked by instability.

[1] Financial Times, Global population growth hits lowest rate since 1950, July 2022.

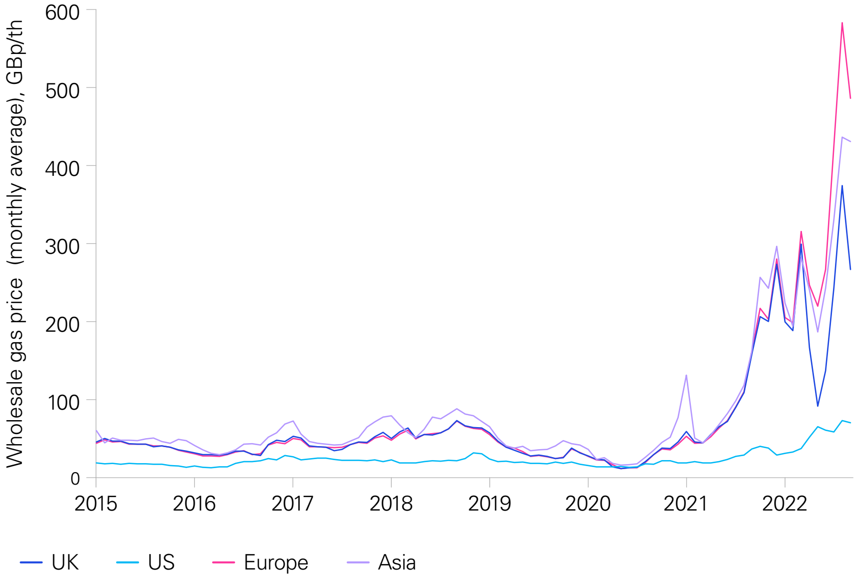
Energy prices stoking inflation

Although inflationary pressures were already present as economies reopened from COVID, the invasion of Ukraine by Russia added an extra strain, with a range of commodities exported by the region seeing their price rise significantly. More recently, some prices have moderated somewhat, and supplies have adjusted while demand eased as the economy slowed.

Energy prices have been at the center of the inflationary surge; although oil prices have moderated lately, contributing to a minor easing in annual inflation figures in many countries, they remain incredibly volatile, with price fluctuations not seen in decades. The price of gas remains heavily impacted by the conflict in Ukraine, with the rush to secure shipments of liquefied natural gas (LNG) for winter, causing not just European but also Asian gas prices to spike recently. It is still uncertain whether sufficient gas supply will be forthcoming over the winter months. This could prove a significant blow to the short-term outlook of some European economies, which rely more on the Russian supply.

The combination of supply chain bottlenecks, generous government spending, tight labor markets and a commodity shock triggered by the Russian invasion of Ukraine caused inflation to shoot well above central banks' targets across many developed economies.

Chart 2: Gas prices are particularly high across most regions



Source: Refinitiv Datastream, KPMG analysis.

A moderation in 2023?

It is expected that inflation may moderate significantly from the middle of next year, and we assume, with a bit of wishful optimism, that the global energy shock will subside. However, we could be entering a structurally more inflationary environment as production costs — from materials to energy and labor — remain elevated.

Faced with inflation well above targets, an immediate concern for most central banks is that inflation expectations stay high while their credibility in fighting inflation is lost. The need for fiscal support is likely to stoke more inflation in the medium term, placing fiscal policy actions at odds with the aims of central banks in meeting their mandates. In the cases where investors have been led to question the sustainability of public finances, such as in the UK in late September 2022, depreciating currencies and rising borrowing costs have exposed vulnerabilities and increased the risk of contagion.

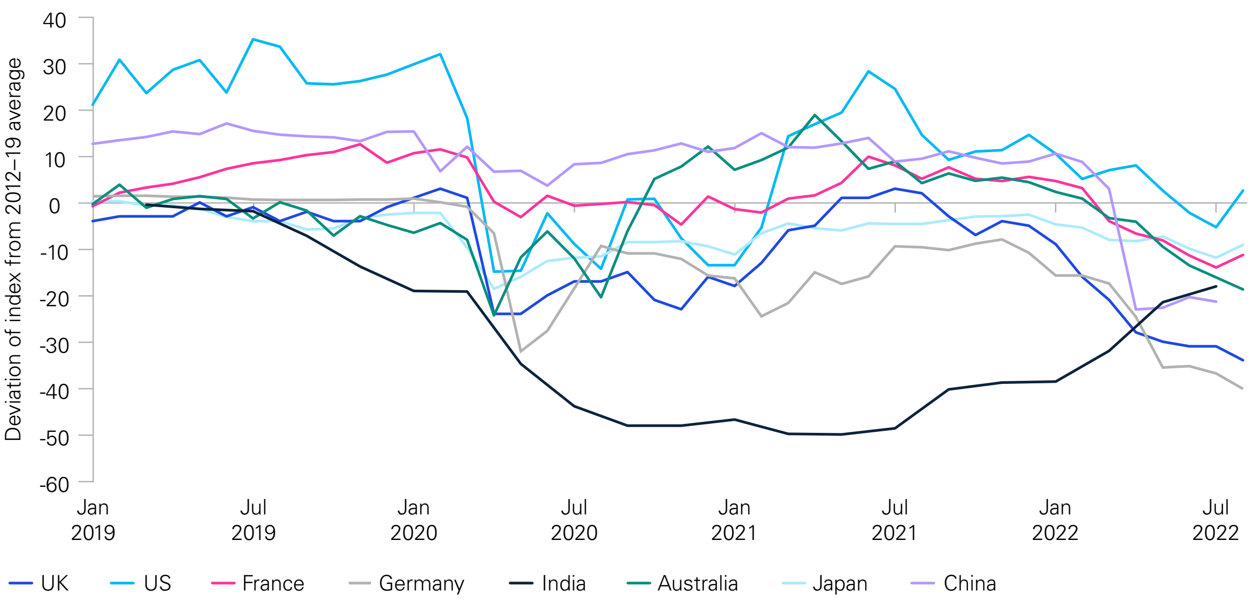
That is why central banks are likely to be more hawkish in their response to what could be a relatively short-lived burst in inflation, with markets penciling in aggressive rate rises over the coming months.

Moreover, suppose inflationary pressures are to become embedded. In that case, interest rates may stay at higher levels than we saw in the past decade, even after the current spike in inflation subsides. This would represent a significant shift in monetary policy in a relatively short time.

Rising costs are taking their toll on consumers, with a cost of living crisis putting a significant dent in households' purchasing power. Consumer confidence has taken a big knock across most economies, and spending is following suit, causing overall economic growth to weaken.

Global companies that are reliant on foreign energy and feedstock inputs, like the chemicals industry, will have to invest more money and brain power to boost productivity, develop new technological solutions and build supply chain resilience to be able to protect margins against the combined forces of inflation, deglobalization and a new, more unstable geopolitical environment.

Chart 3: Consumer confidence has fallen

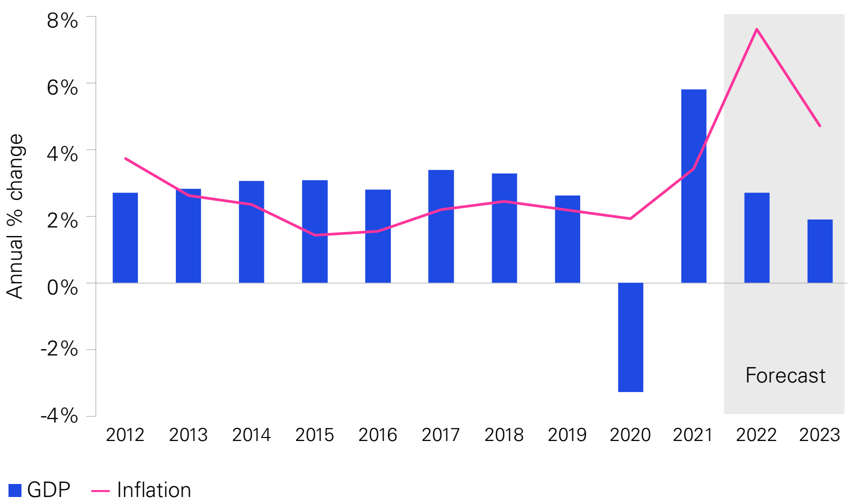


Source: GfK, The Conference Board, Cabinet Office of Japan, INSEE, Westpac-Melbourne Institute, China National Bureau of Statistics, Reserve Bank of India, KPMG analysis.

Forecasts: A mild slowdown

The overall forecast for the world economy is for GDP growth to moderate to 1.9 percent in 2023 after growth of 2.7 percent in 2022. Weaker growth could see inflation moderate to 4.7 percent in 2023 after averaging 7.6 percent in 2022, according to KPMG forecasts. But as economies worldwide brace for another period of headwinds and a slowdown in activity, the hope is that the downturn will be relatively mild on this occasion.

Chart 4: World GDP growth and inflation projections



Source: World Bank, KPMG projections.

Major economy outlooks

China – Balancing COVID containment with supporting economic growth

China will likely stick to its COVID containment policies in the near future. The key issue to watch is how the government balances the objectives of controlling the pandemic and maintaining economic growth. The property market has faced considerable headwinds since H2 2021, and the pressure continues to mount. The slowdown has greatly impacted on investment, bank loans and housing-related consumption. The Chinese government has taken a series of fiscal and monetary policy measures to stimulate demand. More efforts are expected to be announced to support growth.

In contrast to most other economies, inflation has remained relatively low in China, giving the government some room in its monetary policy. Along with Japan (as below), China is the only major economy in the world that is still adopting an easing approach to support growth. China's inflationary pressure is likely to gradually pick up through H2 2022 due to rising food prices and a consumption recovery.

But the re-emergence of new, highly transmittable variants of COVID-19 could lead to more prolonged economic disruptions. Risks could also stem from persistent stress in the real estate sector with more economy-wide consequences. China's economy is also broadly vulnerable to risks related to the global outlook and geopolitical competition with the US and the West. With challenging demographics, ongoing COVID disruptions and less global economic integration, it will likely be challenging for China to maintain its role as the world's foremost manufacturing engine.

KPMG forecasts for China

	2021	2022	2023
GDP	8.1	3.5	5.2
Inflation	0.9	2.5	2.3
Unemployment rate	5.1	5.4	5.1

Source: Wind, KPMG Forecasts.
Note: Average percent change on previous calendar year except for the unemployment rate, which is the average annual rate. Inflation measure used is the CPI, and the unemployment measure is the surveyed unemployment rate.

Germany — Europe's biggest economy threatened by recession

In Germany, a positive first half-year is overshadowed by negative expectations, with high energy prices and a gas shortage endangering economic growth. In August, energy prices were 35.6 percent higher than in August 2021. In the same context, the electricity price for industry exceeded that for households for the first time. As a result of the country's efforts to become less dependent on Russian gas, imports have fallen sharply. The country is having to reduce overall energy demand ahead of winter, including by scaling down manufacturing.[2] High electricity demand, the massive price jumps on the procurement markets, expensive production and uncertainty regarding gas imports will likely cause energy prices to rise further in the coming months. Meanwhile, exporting companies are suffering significantly from the overall global recession and decreasing demand from their most important trade partners. Supply chain disruptions continue to be a significant challenge for several industries — because of material bottlenecks, more than one in two companies have already changed their procurement strategy for critical raw materials.

KPMG forecasts for Germany

	2021	2022	2023
GDP	2.6	1.5	-0.5
Inflation	3.2	8.0	6.8
Unemployment rate	3.6	2.9	3.0

Source: Eurostat, KPMG forecasts.
Note: Average percent change on previous calendar year except for unemployment rate, which is average annual rate. Inflation measure used is the HICP.

[2] The Guardian, How gas rationing at Germany's BASF plant could plunge Europe into crisis, 15 September 2022.

Japan – Loose policy keeping the yen down, adding to inflation

In Japan, headwinds to households are mounting, while exports are being weighed down by the global environment and lockdowns in China, which have put a drag on demand. Japan had a slow start to 2022, with GDP rising by less than 0.6 percent in the last six months. Nevertheless, the continued relaxation of COVID restrictions enabled a solid rebound in consumption — but momentum is expected to ease during H2 2022 as household budgets are squeezed by a step up in inflation, which has risen above the Bank of Japan's target and has further to rise in the months ahead. The Bank of Japan's continuation with loose policy settings has caused the yen to depreciate to its lowest level in decades.

KPMG forecasts for Japan

	2021	2022	2023
GDP	1.7	1.6	2.2
Inflation	-0.2	2.4	1.6
Unemployment rate	2.8	2.5	2.6

Source: Cabinet Office of Japan, KPMG analysis.
Note: Average percent change on previous calendar year except for unemployment rate, which is average annual rate.

US – Economy poised to stall

The Federal Reserve has committed to raising rates and holding them high for longer to bring inflation back to its 2 percent target slowly. The goal is to prevent a more entrenched and persistent inflation cycle from taking root with a mild but prolonged recession. Economic growth is expected to slow below the economy's potential growth rate, while employment is expected to stall and lose ground as we get into 2023. The unemployment rate is expected to cross 5 percent by year-end 2023, and 5.5 percent before inflation fully cools. Fiscal stimulus is expected to remain limited as pandemic aid wanes and infrastructure projects take time to ramp up. Mid-term elections are expected to play a key role in determining whether the White House can deliver more on its promises to curb climate change and deal with social issues.

UK – Economy marred by stagflation

The UK economy is probably already in a mild recession, with growth expected to stay negative for the rest of this year. Inflation is set to peak at 10.5 percent in the UK as government policies limit the impact of energy price rises on households' utility bills. A package of government support measures for households and businesses, and a reversal of significant tax increases, are set to provide a sizeable fiscal boost. Nevertheless, high inflation erodes the actual value of earnings, and rising interest rates, which raise the cost of debt, have created an unprecedented squeeze on household incomes. Investment is also expected to remain weak throughout the next 15 months due to weaker growth lowering investment returns, higher cost of borrowing due to tighter financial conditions, and the expected phasing out of the government's super deduction scheme on plant and machinery investment, which is due to end in March 2023.

KPMG forecasts for US

	2021	2022	2023
GDP	5.7	1.5	-0.7
Inflation	4.7	8.2	3.8
Unemployment rate	5.4	3.7	4.3

Source: KPMG Economics, Bureau of Economic Analysis, Bureau of Labor Statistics.
Note: Forecasts are dated as of September 2, 2022. GDP and inflation are year-over-year percent change. The unemployment rate is an annual average. Numbers are percentages.

KPMG forecasts for the UK

	2021	2022	2023
GDP	7.4	3.2	-0.2
Inflation	2.6	8.9	5.6
Unemployment rate	4.5	3.7	4.3

Source: ONS, KPMG forecasts.
Note: Average percent change on previous calendar year except for unemployment rate, which is average annual rate. Inflation measure used is the CPI and the unemployment measure is LFS.

Appendix: Summary of KPMG forecasts

	GDP			Inflation			Unemployment		
	2021	2022	2023	2021	2022	2023	2021	2022	2023
World	5.8	2.7	1.9	3.4	7.6	4.7	6.1	5.4	5.5
US	5.7	1.5	-0.1	4.7	8.2	3.8	5.4	3.7	4.3
Canada	4.5	3.4	1.3	3.4	6.8	3.4	7.4	5.3	5.6
Argentina	10.4	3.6	0.0	50.9	95.2	87.0	9.3	9.2	8.1
Brazil	4.8	1.9	0.8	8.3	9.8	5.8	13.6	10.4	10.1
Chile	11.7	2.0	-0.6	7.2	12.4	4.7	8.8	8.2	8.1
Mexico	5.0	1.7	1.5	5.7	8.0	5.5	4.1	3.5	3.8
Colombia	10.7	6.6	2.1	5.6	10.7	5.6	13.8	11.6	9.9
Peru	13.5	2.7	2.4	6.4	7.2	3.5	10.9	9.3	8.8
Germany	2.6	1.5	-0.5	3.2	8.0	6.8	3.6	2.9	3.0
Austria	4.8	3.9	0.3	2.8	8.5	5.8	6.2	4.6	4.6
France	6.8	2.5	0.6	2.1	5.9	3.9	7.9	7.5	7.7
Italy	6.6	3.3	0.3	1.9	8.1	4.9	9.5	8.2	8.5
Netherlands	4.9	3.0	1.0	2.8	10.1	3.9	4.2	3.6	3.8
Spain	5.1	4.1	1.8	3.0	9.3	4.9	14.8	12.8	13.0
Ireland	13.4	7.0	4.5	2.5	7.5	4.0	6.2	4.5	4.5
Eurozone	5.3	2.7	0.5	2.6	8.3	6.7	7.7	6.7	6.9
Norway	4.1	3.1	1.6	3.5	5.5	3.6	4.3	2.8	2.8
Sweden	5.1	2.4	0.8	2.2	7.4	4.8	8.8	7.4	7.4
Switzerland	4.2	2.5	1.2	0.5	2.9	1.8	5.1	4.3	4.2
UK	7.4	3.2	-0.2	2.6	8.9	5.6	4.5	3.7	4.3
Poland	5.9	4.1	1.4	5.1	13.8	10.9	3.4	2.9	2.9
Turkey	11.0	4.8	2.2	19.6	72.1	38.2	12.0	11.8	11.8
China	8.1	3.5	5.2	0.9	2.5	2.3	5.1	5.4	5.1
Japan	1.7	1.6	2.2	-0.2	2.4	1.6	2.8	2.5	2.6
Australia	4.9	4.2	2.2	2.9	6.3	5.2	5.1	3.8	4.4
India	8.7	7.2	6.3	5.5	6.7	5.0	8.0	7.6	7.1
Indonesia	3.7	5.7	4.7	1.6	4.4	4.0	6.4	5.7	5.9
Malaysia	3.2	8.6	4.8	2.5	3.6	3.1	4.6	3.9	3.9
Philippines	5.5	6.1	5.1	3.9	5.6	3.8	7.9	5.8	6.0
Singapore	7.6	3.5	3.5	2.3	5.9	2.9	2.7	2.1	2.3
South Korea	4.1	2.8	2.5	2.5	5.4	3.2	3.7	3.1	3.1
Saudi Arabia	3.2	8.0	3.6	3.1	2.6	2.3	6.6	6.0	6.0
Nigeria	3.4	3.4	3.5	15.6	16.1	13.1	34.2	38.3	42.7
South Africa	4.9	1.8	1.5	4.6	7.3	6.1	35.3	34.3	34.7

Source: National statistical agencies, KPMG analysis.

Note: Average % change on previous calendar year except for unemployment rate, which is average annual rate. Figures for India represent fiscal years 2021-22, 2022-23 and 2023-24. Consumer price inflation measured as % change Dec-on-Dec for Argentina, Chile, Colombia and Peru.

What are the expectations where you are?

KPMG economists around the world have given their forecasts for GDP, inflation and unemployment in the period ahead — and here are their expectations in one table for the world, the Eurozone, and 33 individual countries. If you have any queries or would like to discuss the implications of the economic outlook for your business and its operations, please don't hesitate to contact one of our experts below:

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Paul Harnick is a Principal with KPMG in the US and the Global Head of Chemicals & Performance Technologies, KPMG International. He is also KPMG International's Global Lead Relationship Partner for several the largest companies in the industry. Paul has spent his career advising multinational companies in the chemical industry across business strategy and operational process improvement, with a particular focus on complex cross-border M&A and emerging market strategy development.

Stefano leads KPMG International's efforts globally to help companies and governments deal with today's geopolitical challenges. By joining the dots between the macro-political trends and their commercial implications in various sectors, Stefano will help global businesses survive and thrive in geopolitical volatility. He will help identify the 'so what' of macro trends through strategic scenario planning, due diligence and geopolitical risk management. With an academic background in international relations, diplomacy and international law, Stefano is eager to bring to the role several years of management consulting practice in Australia, assisting corporate clients, industry associations, and government clients navigate complex regulatory environments worldwide.

Building teams, supporting diversity

An interview with Bernard Skeete, Vice President, Global Controller and Principal Accounting Officer at Trinseo plc

Bernard Skeete

Vice President,
Global Controller and Principal Accounting Officer at Trinseo plc

Continuing the series of diversity and inclusion themed profile interviews with leaders in the chemical industry, we were delighted to connect with Bernard Skeete, Vice President, Global Controller and Principal Accounting Officer at Trinseo plc, the speciality material solutions provider focused particularly on the manufacture of plastics, latex and synthetic rubber.

Bernard gives some fascinating insights into his life and career journey, coming to the US from Barbados at the age of five, graduating from university, becoming a certified public accountant (CPA) and embarking on a varied career with multiple roles. The diversity and inclusion agenda has always been important to Bernard and it's a journey that he's helping to shape at Trinseo, recognizing there is always further to go. Mentoring and developing others has been a focus for Bernard throughout his career — and he has benefited from a number of mentors himself — as he reflects on the qualities of leadership that help build inclusive, talented teams which can meet and exceed their goals.

Tell us a little bit about yourself including what your first job was and how you landed it?

I was born in Barbados and came to the States when I was five years old. After graduating from Saint Joseph's University, I started full time in a Big 6 Public Accounting firm. Over time, I have accumulated experiences in various industries through my career and held multiple roles as auditor, plant controller, financial, planning & analysis (FP&A) and corporate controller.

My first real job was camp counsellor for a camp for lower income children in the city of Philadelphia through the Archdiocese of Philadelphia. Through the assistance from my then pastor and recommendations from existing counselors, I was successful in obtaining the role. That has been a common theme in my career: every opportunity has come through networking and relationships previously built. Valuing others and their opinions really matters!

Today, I serve as the Vice President, Global Controller and Principal Accounting Officer for Trinseo Plc. Trinseo is a specialty material solutions provider that partners with companies to bring ideas to life in an imaginative, smart, and sustainability-focused manner by combining its premier expertise, forward-looking innovations and best-in-class materials to unlock value for companies and consumers. From design to manufacturing, Trinseo taps into decades of experience in diverse material solutions to address customers' unique challenges in a wide range of industries, including consumer goods, mobility, building and construction, and medical.

I am a member of the National Association of Black Accountants but have served in many capacities in the organization. I am also Vice Chairman for Court Appointed Special Advocates (CASA) Youth Advocates supporting foster children in our Delaware & Chester Counties. I also served as Chairman for one of my former employer's African American Network.

Generally, I pride myself on going beyond the numbers and understanding the business/industry in which I work. I believe that if you are willing to listen you can learn from everyone around you, no matter their level, role or experience. We are all made up of different experiences and its great to appreciate those differences.

What is the most challenging part about your current role and what is the best part of your role?

One of the more challenging aspects includes staying current and understanding the impacts of changes as Trinseo moves forward in its transformational journey. One of the best parts of my role includes watching members of my team succeed in their careers and take on more responsibilities.

What career accomplishments are you most proud of?

I am very proud of becoming a certified public accountant (CPA) — the only one in my family. I'm also very happy that I've been able to mentor and develop leaders inside and outside of the company. Watching people's careers blossom and knowing that I may have added value to them, even if just a tiny bit, is extremely satisfying.

> **"I believe that if you are willing to listen you can learn from everyone around you, no matter their level, role or experience."**

During your career journey, did you have a mentor or champion for your career growth, and if so, what was the most memorable thing they did they help you?

Like many others, I have been fortunate to have many coaches, mentors and silent supporters along the way in my career. Even though I have changed companies several times, these coaches have stayed with me, serving as an invaluable sounding board. From very early in my career, they helped me understand that what's important is to control what you can control — and manage those things you can't. Dwelling on what you can't control doesn't help you keep moving forward. My mentors have also been there, when needed, to help pick me up from mistakes, learn from them, and keep progressing.

What was the most valuable career advice you have received?

Someone once said to me, "Bernard if I didn't watch you, I wouldn't know all the good things that you do." What I have taken from this is that you shouldn't be afraid to share what you do well with others. There is a manner to highlighting your successes without being arrogant. It is okay to be humble and have humility while sharing some of the good work that you do with others, especially if you often work independently.

What's more, even though you may be an introvert, it doesn't mean you can't engage and connect with others. I have found success by reaching out to all functions and understanding what happens in the business. It helps me do my job better.

Can you tell us what Trinseo is doing to support diversity and inclusion within the organization?

The pursuit of a diverse organization should be deliberate and unapologetic. As a global organization, diversity at Trinseo takes on many forms beyond the obvious ones of color and gender. It also includes others such as nationality, childhood experience, and/or religion.

In the DE&I space, Trinseo is just embarking on this journey, and we recognize there is progress still to be made. It has always been part of our core values to treat all those with whom we do business with respect and integrity, and with that value as the foundation, we continue to work to create a diverse, equitable and inclusive workplace for our employees that fosters innovation and creativity.

Diversity is one of our global strategic objectives and part of our definition of high performing teams. Additionally, creating a more sustainable workforce is one of our 2030 Sustainability Goals. These objectives have steered us to become more focused on broadening our recruiting efforts, expanding our board representation, and openly supporting external organizations. In fact, we are in the process of hiring a new DE&I and Culture Leader to lead this charge.

We are taking steps such as these as we aspire to not only achieve company goals, but most importantly ensure our culture represents our core values, so our employees can bring their whole selves to work every day.

When you look around the global chemicals industry, do you feel that there is enough representation of diverse groups in senior leadership roles?

There is always room for continued growth, but progress is being made. We need to ensure we maintain the momentum.

What more could be done by both the industry and government to help improve diversity?

We all need to maintain continued awareness of the issues and keep up our willingness to have the conversation. The pandemic has significantly changed how we work and interact, so considering all of the possibilities will help continue to drive innovation and reinforce success.

As a leader yourself from a diverse background, do you feel greater responsibility for championing diversity? Are there specific things you are doing to support and mentor the next generation of leaders in Trinseo and in your community?

It's not that it is necessarily a *greater* responsibility, but as a leader and officer in the organization it certainly is my responsibility to cultivate all talent, whether that's in my team as a whole, amongst those influenced by me, or in my wider community. It is important to be a good listener, and to actively engage in the conversation and call a spade a spade! It is also my responsibility to understand that I always represent more than just myself in all my endeavours.

As I mentioned, one of the best parts of my job relates to developing my team. I try to accomplish this goal by continuing to mentor even those no longer working directly for me, participation in the community organization mentioned above, providing insights to my own children and being willing to engage in the conversation.

Is there anything else you think is important in improving diversity in the industry?

There are several things.

- Don't be afraid if someone is different from you.
- Be a good listener — sometimes you may learn so much more that way.
- If you're a leader aspiring to bring about positive change, ask yourself what type of leader you want to be both in perception and actuality — then strive to achieve that.

Ultimately, our goal as leaders should be to bring the best talent together to achieve and exceed common goals. To do this, how can we not operate in a diverse environment?

"The pandemic has significantly changed how we work and interact, so considering all of the possibilities will help continue to drive innovation and reinforce success.

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Decarbonizing the chemical industry in Europe and beyond

Green Deal and Fit for 55 considerations for the chemicals and performance technologies industry

By Merijn Betjes, Carlo Franchina, Roel Kluijtmans, and Nicole de Jager

Environment, Social and Governance (**ESG**) trends, such as decarbonization and the shift to a circular economy, result in significant challenges for the chemical industry. At the same time, they can also create opportunities, drive innovation and play an essential role in future value creation within the industry.

Arguably, the most far-reaching "ESG trend" to date that has broad implications for the industry emanates from within the European Union **(EU):** the European Green Deal **(Green Deal)** and Fit for 55 Package.

This article focuses on two of the Fit for 55 legislative packages that are of particular and immediate concern to the carbon-intensive chemical industry, namely the revision of the current EU Emissions Trading System **(ETS)** and, as of 1 January 2023, the introduction of a Carbon Border Adjustment Mechanism **(CBAM).**

The Green Deal and Fit for 55

The EU has dedicated itself to sustainable development and has set a very ambitious target of becoming the first climate-neutral continent by 2050. As a milestone towards this goal, the EU pledged to reduce greenhouse gas (GHG) emissions by 55 percent, compared to 1990 levels, by 2030.

The Green Deal, introduced in 2019, is essentially a roadmap of tax and non-tax policy initiatives designed to achieve the 2050 target. The Deal consists of eight major policy areas, each of which consists of dedicated regulations, strategies, and funding sources for projects under different stages of maturity — all of which should result in smarter, more sustainable transport, a cleaner environment, sustainable use of resources, more affordable energy, the creation of new jobs, and overall better quality of life.

Several funding mechanisms are in place to facilitate the Green Deal and help to ensure a just and inclusive transition, totaling over EUR1 trillion. The goal is to transform EU member states from high to low-carbon economies without reducing prosperity. Funding is provided through grants and contracts, and the EU is moving boldly to other forms of support involving guarantees, financial instruments and even equity.

As part of the Green Deal, the European Commission proposed the first set of targets to be met by 2030 and adopted the "Fit for 55" Package in July 2021. The package is a set of legislative proposals designed to align the EU's climate, transport, land use, energy and taxation policies with its 2030 goal of cutting net GHG emissions.

While the Green Deal represents a general action plan to fight climate change, the Fit for 55 package offers the preparatory path to meet the Green Deal targets. It focuses on specific topics that need particular attention, as well as a robust green transition to achieve climate neutrality. The most relevant Fit for 55 policies that are expected to impact the chemical industry include:

Fit for 55 Package

- **The revision of the EU ETS**[1]
- **The introduction of the EU CBAM**
- **The revision of the EU's Energy Taxation Directive (ETD)**[2]
- **The amendment of the EU's Energy Efficiency Directive (EED)**[3]
- **The revision of the Renewable Energy Directive (RED)**[4]

[1] The EU ETS, which currently applies to limited energy-intensive, high emitting industries, is a cap-and-trade system that sets an annual cap on the amount of greenhouse gases that companies in covered sectors may emit. This amount is covered by allowances, which are tradeable. Within the cap, companies either receive emission allowances for free or buy them, and unused allowances can be sold or used the following year. The cap decreases every year, ensuring that total emissions fall. Substantial penalties are levied when these caps are exceeded or where the number of allowances held do not cover the emissions generated.

[2] The directive is the framework for the taxation of electricity and energy products used, such as motor fuel or heating fuel. The proposed revision links taxation levels to the energy content and environmental performance of an energy product. It aims to ensure that fossil fuels are subject to higher minimum tax rates. Taxation is, therefore, no longer determined by consumption volume.

[3] The proposal entails a revision of the EED to raise the energy efficiency target for primary and final energy consumption from 32.5 percent to 36 percent and 39 percent, respectively.

[4] The proposal entails increasing the target share of renewables in the energy mix from 32% to 40% by 2030. Emphasis is on sectors with relatively slower renewable integration, such as buildings, industry, heating and cooling, and transport.

Currently, carbon-intensive industries, such as the chemical industry, are most affected by these changes, especially as governments look toward decoupling economic growth from resource use. There is an increased demand from consumers for sustainably produced goods and services, and the laws and measures proposed under the Green Deal will likely only strengthen this.

Carbon pricing and environmental taxation elements of the EU Green Deal

Plastic TAX	• Revenue collection based on **non-recybled plastic consumption**	Up to Each Member State whether or not to introduce own plastics tax
Energy Taxation Directive (ETD)	• Tiered rates based on sustainability of fuels • Change from unitary to EUR/GJ • Removal/phasing out of exemptions	Increased transport costs incentive to transition to more sustainable motor fuels
Carbon Border Adjustment Mechanism (CBAM)	• **Shadow ETS** mirroring phase out of free permits • **Limited sectors:** Aluminum, iron and steel, cement, fertilizer and electricity plus the potential to expand	Increased costs for importing certain goods/Prevent carbon leakage
New Emissions Trading Scheme (ETS 2)	• New separate **ETS for road transport and buildings** based on fuel consumption	New carbon price that will more directly impact consumers
Existing Emission Trading System (ETS 1)	• Accelerated emission reduction by **lower cap** and **free allowance reduction** • **Inclusion of shipping**	Increased cost/incentive to reduce emissions

Fit for 55
Package components

Pricing carbon in the EU and beyond

The revision of the EU ETS entails strengthening the current ETS, i.e., a faster reduction of allowances and a phase-out of free allowances and extending the ETS to additional sectors[5] (i.e., the inclusion of maritime transportation and the creation of a new regime for buildings and road transportation).

The CBAM, which is a supplementary measure to, and mirrors, the EU ETS, operates by imposing a charge on the embedded carbon content of certain imports that is equal to the charge imposed on the production of domestic goods under the ETS, with adjustments being made to this charge to take into account any mandatory carbon prices in the exporting country.

Currently, the ETS only covers companies that operate within the EU. This means importing goods from the covered sectors into the EU could have a lower price than domestic EU producers, which may lead to carbon leakage.[6] Therefore, by imposing an equivalent carbon price on the imports of covered goods, the playing field is leveled for both EU producers, and EU importers of such goods as partner countries are encouraged to decarbonize their production processes. CBAM will replace the free ETS allowances currently granted to EU producers to help ensure that there is no double benefit afforded to EU producers. As a result of placing a price on the carbon content of EU imports, the CBAM, in essence, also makes non-EU sectors and companies responsible for their emissions. And in line with the level playing field, carbon pricing in the non-EU exporting country could be deducted from the CBAM amount.

The initial scope of CBAM proposed by the European Commission covers imports of goods from five emissions-intensive sectors deemed at greater risk of carbon leakage into the EU customs territory: electricity, iron and steel, cement, aluminium and fertilizers. Polymers, organic chemicals, hydrogen and ammonia may be included in the initial scope of covered products.[7] It is expected that both the target industries and the list of covered commodities will be extended in the future.

CBAM will replace the free ETS allowances currently granted to EU producers to help ensure that there is no double benefit afforded to EU producers.

[5] EU Emissions Trading System (EU ETS) (europa.eu)

[6] Carbon leakage is linked to the risk that European producers will delocalise their production to countries where either a lower (or no) carbon price is levied, or consumers will switch from buying EU-produced goods to purchasing substitutes from non-EU countries.

[7] KPMG International, Fit for 55 mid-July 2022 legislative update, July 2022.

CBAM Structure

It is established as an integral component of the ETS, specifically in respect of imported cement, electricity, fertilizer, aluminium, iron and steel. Following a review before the end of the transitional period, the EU may decide to expand the scope to cover additional products and emissions.

The CBAM aims to prevent carbon leakage by imposing a carbon price (through the purchase and surrender of CBAM certificates) on specified high carbon intensity imported products that may have a lower (or no) carbon price attached.

Only authorized importers may import covered CBAM products. EU importers must, therefore, apply for authorization and be authorized by the competent national authorities before importing such goods.

Importers of covered goods would be required to surrender CBAM certificates corresponding to the declared emissions. (The quantity of embedded emissions, calculated according to established EU methodologies, must be independently verified.)

During the transitional period, importers of covered goods are mandated to submit, on a quarterly basis, a CBAM report that details the quantity of covered products imported, the actual total embedded emissions associated with these products, and any carbon price paid in the country of origin.

The CBAM will be enforced in the same manner as EU customs laws, meaning that affected EU importers must classify the imported goods using the EU's classification system at customs (CN/HS codes) and the origin must be determined correctly (in accordance with the customs rules on non-preferential origin).

The price of CBAM certificates will be calculated on a weekly basis as the average auction price of EU ETS allowances from the prior week, expressed in €/tonne of CO_2 emitted.

There are rapidly evolving consequences for businesses involved with the cross-border import of goods with greenhouse gas-embedded emissions into the EU. This means that not only EU-based companies should be sitting up and taking note.

As a new carbon pricing framework in the EU, CBAM will have a transformational impact on companies engaged in international trade of the foreseeable growing list of covered commodities codes and is expected to reshape global trade.

Some of the immediate direct impacts that EU companies may feel include possible higher import prices of covered goods (e.g., raw materials and base chemicals) and increased costs of secondary goods that have components of covered goods (e.g., vehicle manufacturers buying polymer parts that contain imported higher-priced raw materials and base chemicals). To sell covered goods to the EU, non-EU companies must implement carbon accounting to track the embedded emissions associated with these products (and have these embedded emissions independently verified), as this product-specific information must be provided to the authorized declaration upon importation. Additionally, supply chain disruptions may occur if imported goods are stopped at the border due to imported covered goods not being declared to customs by an authorized declarant or incorrect classification of goods according to the CN codes.

Impact on the chemical industry — a cause for concern?

Assuming that the ETS covers EU installations of chemical companies, changes to this system will directly impact chemical businesses and increase their carbon costs. Moreover, the chemical industry is already deemed at high risk of carbon leakage given its high trade and energy intensities leading to a significant risk of investment leakage. Combined with a stabilizing demand and declining investments in the EU chemical industry, effective measures against carbon leakage are crucial to safeguard the EU's competitiveness and the massive investments needed to achieve the climate transition.

The chemical industry value chain is very complex, interlinked and diverse. Its products are used in and supplied to all sectors of the economy. If the CBAM is applied to the chemical industry, its effects are likley to be noticed in other sectors and industries as well. Polymers, organic chemicals[8], hydrogen and ammonia could be included in the initial scope of covered products by CBAM. This will likely directly impact chemical companies' supply and value chain, increasing costs and putting pressure on the industry.

[8] HS codes 29 (Organic chemicals); 2804 10 000 (Hydrogen); 2814 10 000 (Anhydrous ammonia); and 2814 20 00 (Ammonia in aqueous solution).

Next steps

Businesses should already be preparing to adapt to the upcoming changes that are almost upon us. The most urgent item for companies to align themselves with the CBAM regulation is adherence to reporting obligations beginning 1 January 2023. As mentioned previously, businesses are required to report the embedded emissions in imported goods every quarter (during that quarter of a calendar year), detailing the direct and indirect emissions and any carbon price effectively paid in the country of origin.

For businesses to achieve a smooth roll-over in the upcoming transition period (from reporting to financial obligations by 2026/2027) and minimize the disruption to their business model and costs, all importers of initial covered products — both those included (i.e., cement, iron and steel, aluminium, fertilizer, electricity) and those potentially included (i.e., polymers, organic chemicals, hydrogen, ammonia) — must be ready for these transitional period reporting obligations.

As more products fall into the scope of the expanded execution of CBAM, more and more businesses will need to prepare for its implementation. It is critical for companies and importers of CBAM goods into the EU to remain well-informed of these developments and begin evaluating the overall impact on their business activity, which may not be limited to a view on their customs data only, but also impact their sourcing and supply chain.

Few companies will know in what country the actual emissions relating to the development of their goods were generated. Companies that consume covered products could face significant additional cost pass-through from existing suppliers due to the emissions occurring in geographies without commensurate low carbon policies and those associated with transporting the goods to the EU. Organizations should ensure that they understand the geographical composition of their emissions to enable them to undertake a supply chain review, where required, making conscious cost versus carbon trade-offs and ensuring the resilience of their pricing model to the proposed changes.

Notwithstanding the administrative costs associated with this tax measure, businesses should begin focusing on the quality and availability of their data elements, prepare for a global supply chain review, and assess the implications of CBAM on their business model, set-up and trade flow to stay competitive.

As more products fall into the scope of the expanded execution of CBAM, more and more businesses will need to prepare for its implementation.

Key actions and considerations

Actions	Considerations
Identify and create a core team to manage this topic.	Who should be responsible and take the lead? Who should be part of this core team? Tax, customs, sustainability, operations?
Review the global supply chain to determine the potential impact of CBAM.	Are the products in scope imported? Does CBAM apply?
Review the Combined Nomenclature (CN) and Harmonized System (HS) codes and check where the product comes from.	Is the product on the list (annex I of the CBAM regulation)? If not, the product is, in principle, out of the CBAM scope.
Prepare to register for CBAM in collaboration with customs.	Which entity needs to register? Global or per country? What about the representation? Is the entity permitted to be an authorized declarant?
Determine data availability.	Are embedded (direct and indirect) emissions calculable (annex III)? Is there insight into actual emissions, or should the standard (default) values be relied upon?
Prepare for the reporting obligations.	Should systems be implemented for CBAM administration, quarterly reports, yearly declarations, and the verification of embedded emissions?
Prepare to pay for CBAM.	Calculate the financial impact.
Develop ongoing insight into carbon pricing in third countries (carbon prices paid outside of the EU on imported goods may be credited).	Which countries are products imported from? Do these countries have a carbon pricing system in place?
Reduce own carbon emissions and work with suppliers to create a sustainable, low-carbon and environmentally friendly supply chain.	Should the supply chain be restructured, or should new partnerships be formed?
Importers of products that the CBAM does not currently cover: Continuously monitor CBAM developments, especially regarding expanding the scope to include additional covered products.	Should the carbon content of imported goods start to be monitored in preparation for future developments?

How KPMG can help

KPMG Global Trade and Customs practices provide specialized assistance in global trade and customs matters, including CBAM. Working alongside KPMG firms' Trade and Customs specialists, ESG, sustainability and green taxes subject matter professionals can assist you with an initial assessment of the CBAM implications for your business and, if required, conduct a more in-depth supply chain review.

KPMG professionals are ready to work with clients on the journey to a low carbon future.

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Nicole has specialized in government grants and tax incentives for the past 12 years and has also specialized in carbon tax over the last four years. More recently, she expanded her areas of specialization to include the EU Green Deal, specifically the Fit for 55 Package, when she joined KPMG's global tax and legal ESG team. She also has experience reporting and conducting audits in terms of International Standards on Auditing and managing regulatory assurance services concerning reporting to the Department of Trade, Industry and Competition (dtic) and the South African Reserve Bank.

An ABC of ERP for chemical businesses

How to get started on a business-led transformation journey

By

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Many chemical businesses have aging on-premise ERP systems with a high degree of homegrown customization. These have served companies well over the years but have increasingly been tested through the challenges of COVID and the supply chain disruptions that arose from the pandemic, which are continuing now as geopolitical tensions create new operational complexities.

These disruptions show businesses that greater organizational agility and visibility are essential — perhaps, the time is ripe for chemical businesses to consider upgrading their ERP landscape.

Alongside this, ERP solution providers are increasingly encouraging a move to the cloud to take advantage of the next generation of platform capabilities. Support for some on-premise solutions may be withdrawn in the coming years. In that sense, the clock is already ticking.

An ERP transformation is no small undertaking, but it's not something businesses should fear or shy away from. If your project is well-planned, thought through, and executed, there are multiple potential benefits that can be gained, namely:

- Reduced costs and increased efficiency
- Stronger financial reporting systems
- Better grip on regulatory compliance
- Better protected customer and commercial data
- Enhanced cyber security
- Analytical insights into business performance
- Greater ability to pivot and adapt to supply chain and operational challenges

So, as the topic increasingly looms in the Boardroom, what are the critical elements for chemical businesses to consider in a successful ERP transformation?

Setting up for success

ERP program governance intends to manage and drive the overall value realization of the transformation project. The fact is that many complex transformation projects fail to deliver value in a variety of ways:

Technology-enabled transformations are complex and risky...

70%	of major changes fail to achieve targeted benefits	56%	of programs are behind schedule	44%	of companies fail at large scale change initiative
37%	are over budget due to project management failure	35%	ROI is achieved; compared to 143% with change management	21%	of initiatives saw a decrease in productivity

Source: 2017 KPMG secondary research compiled from various studies on large scale business transformation implementation.

To avoid these pitfalls, it goes without saying that setting up and structuring the project effectively is fundamental to success. You need a robust program model with a PMO at the heart of the project to direct, monitor and steer; clearly defined roles and responsibilities for all the key parties involved; milestones and timelines for each project stage; and effective monitoring to validate progress and ensure the project remains on track.

An ERP transformation is no different from any other change management program your business has been through in the past — and may bring the same time-honored techniques to bear. It's classic project management territory, whereby you need a holistic and people-focused approach to bring all stakeholders on the journey. This often referred to as the 'Make It' methodology for change: Make it Clear (align leaders around the strategic aims); Make it Known (communicate the change vision); Make it Real (define what the changes will mean for people); Make it Happen (carry out the change and support people to work in new ways); Make it Stick (ensure there is capability in the organization to maintain the change).

Putting in the foundations

What do we want to be?

- Create a transformational vision and culture
- Examine key questions across strategic, organizational, and user-centric considerations

How do we get there?

- Determine the program architecture and critical roles
- Engage partners in program roles aligned to areas of expertise

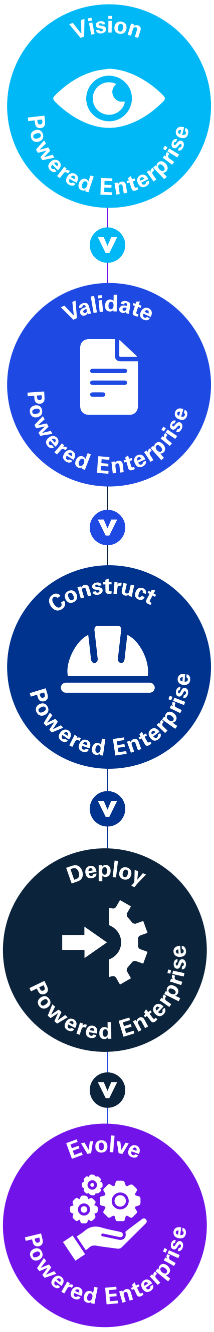
What do we need to do?

- Define the functional target operating model
- Align on the degree of transformation desired across each layer of the target operating model
- Layers include: Service Delivery, People, Business Process, Supporting Technology, Data and Reporting, Governance and Controls, User Centricity

How do we start?

- Mobilize the program
- Consider phase 0 (a planning phase before the Vision phase) to launch successfully — Refine the vision, scope, technology components, budget, timeline and deployment strategy to align stakeholders on a case for change and develop a board-ready business case to help realize the future ambition

Once you've been through these steps, you should be ready for the main phases of the program to begin. This starts with a **Vision** of the end-state you want to achieve, together with the target operating model (TOM) that will make that possible (some of this you will already have considered at the foundations stage); then, **Validate** this through finalizing the to-be design; **Construct** the technology solution and the design layers of the TOM, including an iterative testing process throughout; **Deploy** the solution, including extensive User Acceptance Testing (UAT) and end-user training; and finally **Evolve** the solution in the post-go-live environment so that it becomes part of business as usual with a continuous improvement track and managed service programs in place as applicable.



KPE Method	Phase description
Vision	The primary objective of the Vision phase is to launch the project and confirm that the high-level target operating model (TOM) is aligned with your strategy.
Validate	The primary objective of the Validate phase is to align and finalize the to-be design layer of the TOM, develop a plan for implementing the TOM, and finalize the solution design.
Construct	The primary objective of the Construct phase is to build and test the technology solution and design layers of the TOM using an iterative testing process and prepare for deployment.
Deploy	The primary objective of the Deploy phase is to conduct User Acceptance Testing (UAT), deploy the solution and its relevant components, and deliver training to end users.
Evolve	The primary objective of the Evolve phase is to complete post-go-live support and project closure procedures and transition to managing service programs as applicable.

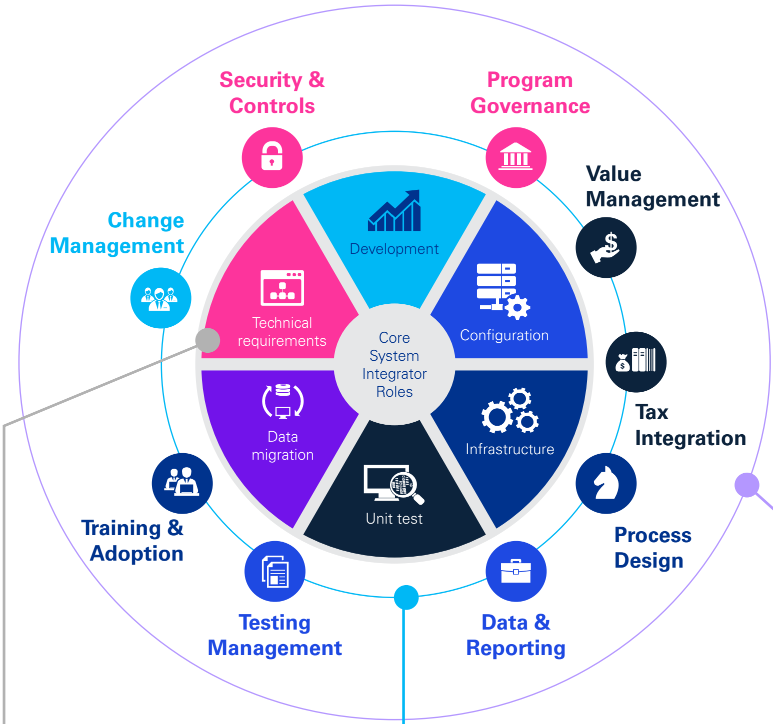
A new deployment model for transformations that truly deliver

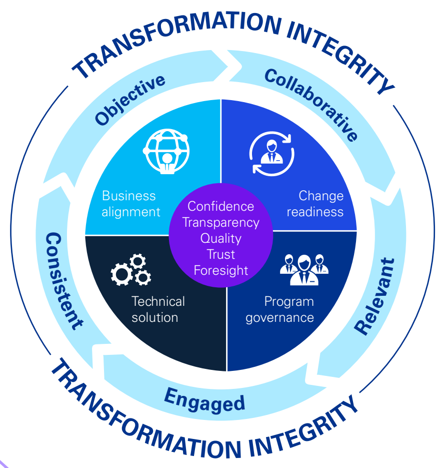
However, while this classical project management approach fully applies to ERP projects, KPMG professionals believe that today's complex changes require a new deployment model that can enable the effective delivery of complex solutions involving many supporting vendors.

This modernized approach seeks to leverage additional expertise and perspectives across the program with the aim of maximizing success. It involves breaking the work into three key roles: systems integrator, business enablement advisor, and transformation integrity advisor.

Transformation Program Roles

Today's complex transformations require a new deployment model. This modernized approach leverages additional expertise and perspectives across the program to help enhance success.





System Integration

- Executes traditional technical roles
- Configures solution environment
- Integrates with other technical systems
- Develops custom RICEF objects
- Manages infrastructure strategy
- Creates and executes data migration strategy
- Conducts software quality assurance for coded objects

Business Enablement

- Supports business process teams to ensure future state vision aligns with customer needs, leading practices, industry trends, transparency requirements and program goals
- Supplements system integrator role with targeted, independent capabilities
- Designs and implements security and controls integrations
- Defines and executes independent program governance
- Validates program savings and value creation from business case
- Establishes change and training efforts to embrace transformation

Transformation Integrity

- Monitors various program aspects as an objective party for quality adherence
- Evaluates strategic transformation risks beyond traditional horizon of program governance
- Utilizes specific client, industry, technology or transformations insights to inform key stakeholders
- Serves as a 5th layer of quality and risk defense beyond traditional risk players (SI, PMO, Internal/External audit, software vendors, etc.)

Systems integration

The systems integrator is at the heart of the technical work, configuring the solution environment and integrating the new technology with other technical systems. They can manage the infrastructure strategy, create and execute the data migration strategy, and conduct software quality assurance for coded objects. In short, they can perform the traditional technical roles involved in new system integration and implementation.

Business enablement

Next-generation ERP is no longer a single technology platform but an ecosystem of capabilities and software. The business enablement advisor is crucial in enabling the organization to unlock its business value. They help to ensure delivery aligns with customer needs, leading practices, industry trends, transparency requirements and program goals. They can validate program savings and value creation against the business case and have key inputs into security and control integrations, program governance, and training needs.

It's a case of working across the critical layers of the TOM — process, governance, service delivery, people, technology, data & reporting — to unleash the potential benefits, with the aim of ensuring value is not lost. A good business enablement advisor should continually strive to ensure that the organization puts itself in a leading position relative to its peers.

Take processes as an example — whereas a 'middle of the pack' position would be to have standardized processes which are documented, with a low level of automation and integration, the kind of leading position the business enablement advisor should be aiming to help the client reach would be simplified, collaborative and automated processes, integrated across functions, and where strategic initiatives are identified, analyzed and prioritized.

The business enablement advisor is crucial in enabling the organization to unlock its business value.

One of the most significant areas of value the enablement advisor can bring is addressing the loss of customization when moving to cloud-based platforms. Many businesses have heavily customized on-premises solutions that have grown over time and fear that a cloud solution may not be able to cater to their business's unique requirements. But this is where automation and digitization come in. Instead of customization per se, it's about leveraging the data in the platform to achieve the same results.

For example, imagine a business had created customization in their on-premise ERP system to extract data about upstream revenues and put that into the accounting/financial system because there was a gap between the two systems that needed bridging. In the new cloud-based world, it will be possible to create a piece of AI-based automation through a digital layer that automatically pulls the data out from one and places it into the other. There won't be any need to carry out a reconciliation, unlike in the old regime, because the two pieces of data can co-exist independently in different parts of the system. The result is a more flexible, elegant and change-proof solution.

Cloud-enabled ERP solutions force clients to consider their unique business requirements and determine a value to the present-day customization to ascertain if the value is there for the business partner or shareholder. This often significantly reduces manual processes that prevent employees from focusing on value-added activities. Moving to the cloud is also about removing unnecessary complexity from business processes and decreasing the cost of maintaining the solution.

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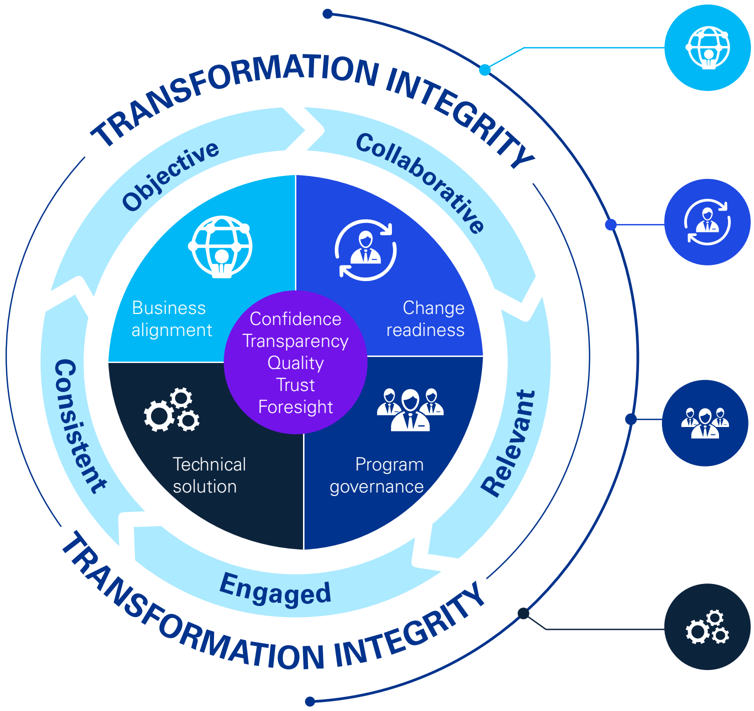
Transformation Integrity

Quality assurance is a critical aspect of any project. KPMG's Transformation Integrity (TI) model is a structured but flexible strategic risk management methodology designed to support the implementation of complex, high-value transformations. It helps clients develop forward-looking risk profiles to better gauge their effectiveness at achieving expected outcomes and develop proactive mitigation strategies if results are at risk. TI plays a crucial role in assessing and validating progress at each critical stage gate of the project.

Transformation Integrity addresses core transformation risks through four workstreams creating proactive insights and evaluating delivery constraints across all contributing parties.

The **business alignment** workstream monitors the consistency and accounting of program requirements and objectives all along the journey with a strategic eye on preserving business case outcomes; **change readiness** seeks to create objective avenues for feedback while evaluating the effectiveness of the processes and artifacts designed to enable the organization to operate in the post-transformation state; **program governance** is designed to monitor the performance of all engaged vendors for complete, accurate, timely and transparent representations of scope, risk, quality, budget, schedule and communications. In contrast, the **technical solution** workstream monitors technical aspects, providing insights related to the processes and artifacts used to develop and deploy the technology. This could include, for example, assessing and validating the Business Enablement advisor's work in building any automated solutions to replace old customizations — ensuring that they are secure and consistent with the rest of the technology stack.



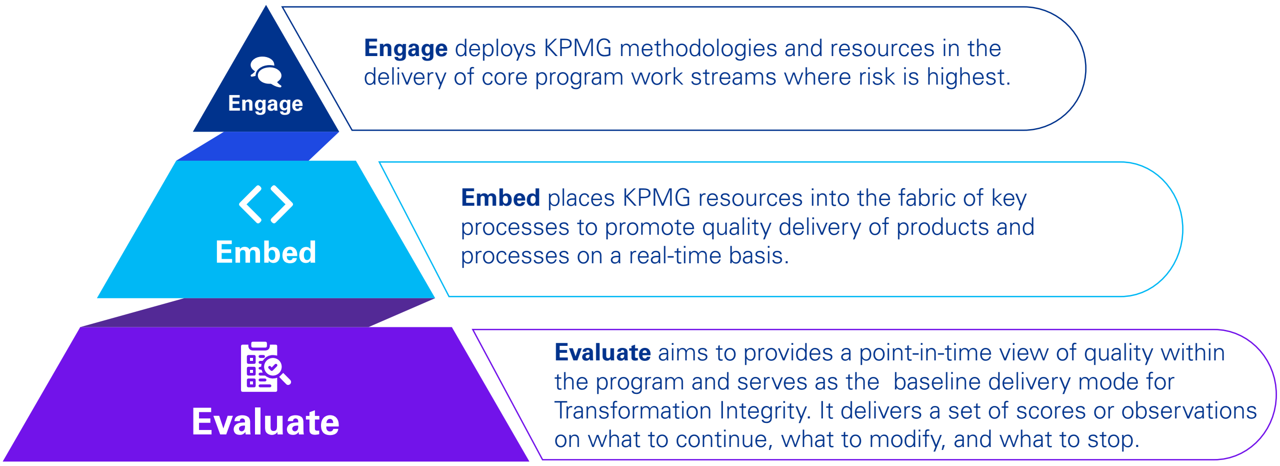
Business alignment monitors the consistency and accounting of program requirements and desired transformation objectives along the transformation journey with a strategic eye on preserving business case outcomes.

Change readiness creates objective avenues for feedback, allowing all stakeholders a voice while also evaluating the effectiveness of the processes and artifacts designed to prepare the organization to accept and operate in the post- transformation state.

Program governance sets the tone for the other Transformation Integrity workstreams by monitoring the performance of all engaged vendors with for complete, accurate, timely, and transparent representations of scope, risk, quality, budget, schedule, and communications.

Technical solution monitors various technical aspects of the transformation, providing insights related to the processes and artifacts used to develop and deploy technology with a keen focus on fostering a collaborative environment, not simply to be a dissenting voice searching to indict a vendor's performance.

Different clients may have other transformation-driven objectives — which is why KPMG firms have a configurable delivery model that is designed to give clients multiple options, ranging from point-in-time evaluations to being embedded in crucial areas for the highest risk areas of the project. The first of these engagement modes — **Evaluate** — provides a point-in-time review of specific project activities to confirm the quality with scores or observations on what to continue, what to modify, and what to stop. The medium option — **Embed** — places KPMG resources into the fabric of key processes to help promote quality delivery on a real-time basis. It's a powerful way to mitigate risks that are not reported via typical project and program protocols. Finally, there is **Engage** at the top end, where KPMG methodologies and resources are deployed to deliver core program workstreams where risk is highest. This approach seeks to ensure high-caliber delivery of crucial program areas likely to encounter significant risk.



Swerving the common blocks in the road

As noted earlier, it's a simple fact that many ERP transformations hit roadblocks and fail to meet expectations.

So how can you avoid the stumbling blocks? Our top five tips for success are:

1 Understand the business and IT context

No improvement can be achieved unless you have a good understanding of the current situation, including what works well, what does not, and why. What are the critical business and technology outcomes you want to achieve? What do you want to change and improve in what you have now?

2 Don't underestimate stakeholder management

While it's essential to bring stakeholders on board, at the outset and throughout the journey, it is equally important to keep engagement and communication high, consult where needed and work by consensus wherever possible. Establish and articulate a clear 'case for change' that all stakeholders can sign up to.

3 Agree on scope and principles

Defining a clear scope can help to make the project more manageable, structured and organized. The design principles should ensure the strategy is aligned and stays consistent. Be clear about the level of standardization you will introduce (versus customization or digital layer solutions).

4 Identify unnecessary complexity

In everyday practice, KPMG professionals often see much of the potential value of ERP being lost due to unnecessary complexity. This can start with too much variation in business processes and unnecessary customization in your (existing) system. The level of complexity in your current landscape is usually an indicator of where you can find improvement potential — and can also be a starting point in choosing between a greenfield or brownfield scenario.

5 Focus on management information and analytics

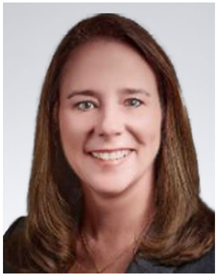
Besides considering an efficient set-up and executing transactional processes, keep a constant focus on obtaining value-adding management information that can enable the business to perform at a higher level. What information and insights do you currently have from your ERP — and where do you need to get to? How can you embed data analytics to drive insights and business value? Better, faster and actionable information that can be turned directly into operational, financial and customer insights — this is really what the project is all about achieving.

How KPMG can help

For chemical companies to stay competitive, businesses must transform by leveraging technology to enable new opportunities and capabilities. Implementing the next-generation ERP Platform is a key component of digital transformation — incorporating artificial intelligence, in-memory computing, redesigned business processes, analytics, cloud technologies, and personalized user experience — to truly transform how organizations do business so that they can run at the rate needed to remain agile and achieve growth that is required to thrive in today's market. KPMG firms' range of implementation approaches, frameworks, and enablers are aligned to provide tailored technology solutions specifically for the chemical industry's system implementation challenges. Our approach seeks to target enterprise-wide capabilities with a customer-centric approach to deliver transformation.

KPMG firms' leading Quality Assurance methodology — Transformation Integrity — provides a platform for consistent evaluation and reporting across QA projects. By leveraging this repository of performance indicators, observations, and leading practices, KPMG professionals can better support the accuracy, health and risk mitigation of a client's new customer information platform program with real-world insights necessary to help reduce risk and improve quality.

About the authors



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The KPMG Global Chemicals Institute

These are exciting times for the global chemical industry, and KPMG firms are proud to support such a vital part of modern life. Clients produce components in phones and tablets, the majority of non-metallic automotive parts, paints, coatings, personal care products, packaging, water treatment products, agrochemicals, and many other products worldwide. Equally important, we are committed to helping the global chemical industry maintain its unwavering focus on sustainability and products designed to help improve lives and make the planet healthier.

We also recognize the challenges involved with running a global chemical organization today. A confluence of events continues to batter chemicals supply chains around the world. The industry is experiencing a very robust deals market. Chemical organizations seek to expand their technical capabilities while maintaining cyber security vigilance appropriately. ESG is becoming more mainstream due to intensifying investor, regulatory, and consumer pressure holding companies accountable for ESG impacts. Adding to this complexity is the uncertain global economy and geopolitical risk, presenting significant challenges for chemical producers.

KPMG firms help chemical organizations to compete and thrive in this rapidly evolving business environment. Backed by a global organization of over 1,000 professionals, KPMG international chemical practices provide tax, audit and advisory services, a range of information resources and thought leadership to help industry executives stay informed and up-to-date on recent developments in their sector. With KPMG, chemical organizations can develop new ways to create robust, sustainable, flexible strategies, teams, and operating models that quickly adapt to a dynamically unfolding future.

The KPMG Global Chemicals Institute provides the chemicals and performance technologies industry with leading insights in all key markets. You can access valuable thought leadership, webcasts, and videos on key industry topics as a subscriber.

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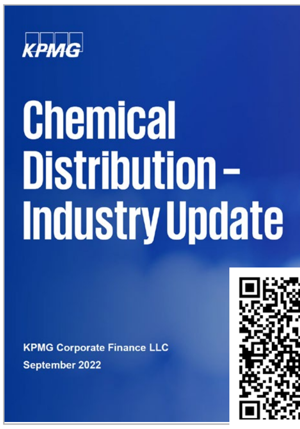

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