CIA CHEMICAL INDUSTRIES ASSOCIATION

AUGUST 2023

CIA Third Quarter Economic report 2023

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RESPONSIBLE CARE

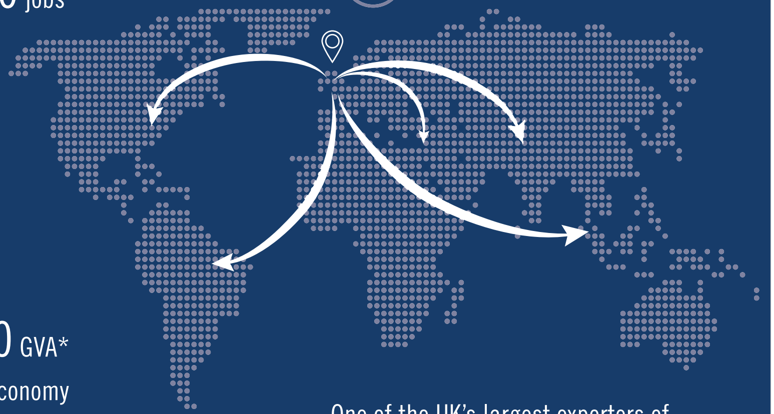
Current shape of the industry

CIA | CHEMICAL INDUSTRIES ASSOCIATION

UK CHEMICAL INDUSTRY 2023 IN NUMBERS

4,415 businesses directly employing 151,000 people while supporting over 500,000 jobs in the economy

17.5% of total UK business R&D spend



Salaries over 33% higher than, manufacturing and 45% higher than the whole economy average

Highly productive sector with £203,000 GVA* per employee, 280% higher than whole economy average 148% higher than manufacturing

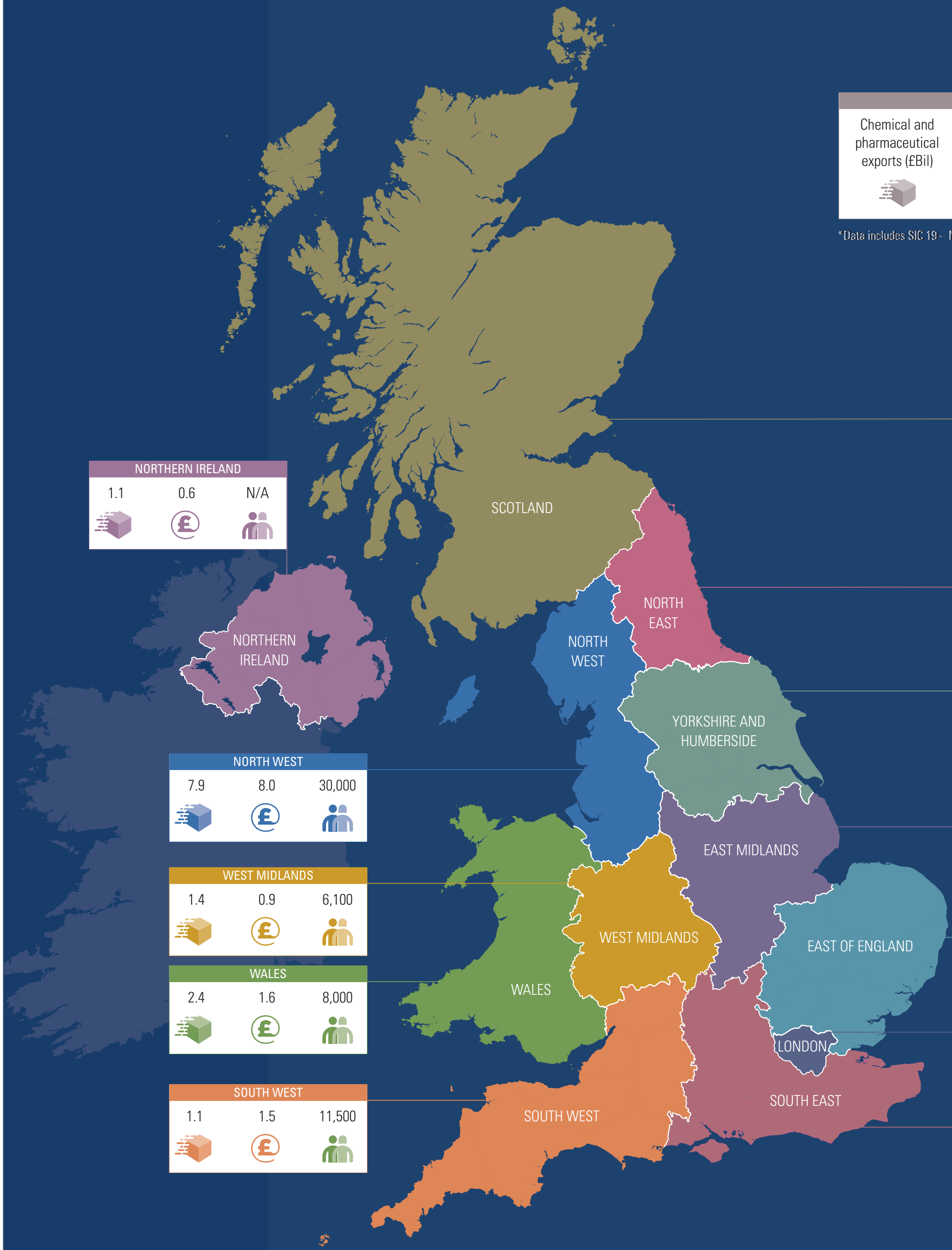
One of the UK’s largest exporters of manufactured goods with annual exports of over £54bn

* Gross Value Added

CHEMICAL INDUSTRIES ASSOCIATION

MADE IN THE UK, SOLD ACROSS THE WORLD

Our Chemical Industry



KEY

Region	Chemical and pharmaceutical exports (£Bil)	GVA (£Bil)*	Employment
SCOTLAND	3.0	2.4	10,500
NORTHERN IRELAND	1.1	0.6	N/A
NORTH EAST	2.8	2.1	9,500
YORKSHIRE AND HUMBERSIDE	3.0	3.3	16,500
NORTH WEST	7.9	8.0	30,000
EAST MIDLANDS	1.7	1.4	10,000
WEST MIDLANDS	1.4	0.9	6,100
EAST OF ENGLAND	7.6	3.2	15,000
WALES	2.4	1.6	8,000
LONDON	5.3	0.7	2,500
SOUTH WEST	1.1	1.5	11,500
SOUTH EAST	9.5	5.4	13,500

*Data includes SIC 19 - Manufacturing of coke and petrolium

Figures correct as of Q1 2023.

Source: ONS

Executive summary

I am pleased to present our latest economic report, which has been written by Michela Borra, our Economist.

This report has two sections. The first is a CIA analysis of government data via the Office for National Statistics (ONS). This section assesses the UK chemical industry's performance against that of the wider economy and is followed by a look at what challenges lie ahead. The second section presents the results and further analysis of our own Q2 2023 Business Survey.

Many of the challenges that affected the global economy in the first quarter of the year have not been resolved and continued to slow growth also in the second one. The strengthening of geopolitical alliances and rivalries resulted in further trade restrictions, the high cost of energy derived from the sanctions on Russian and the high demand for energy during winter increased production costs putting upward pressure on the already climbing inflation. Inflation over 10% urged the Bank of England to increase interest rates, but high levels of consumers' savings made demand resilient to inflation and interest rates resulting in stickier-than-expected inflation. Whilst most forecasters had predicted a recession for the first two quarters of 2023, thanks to strong consumer demand, official data showed no quarterly contraction in Q1, and an economic recession in 2023 is unlikely. In Q2, prices of energy were stable, mainly due to a decrease in household demand, but with winter approaching and the UK not in a significantly better place in terms of energy storage and production from the previous winter, energy-intensive industries and households should expect a bounce back of energy prices.

The latest data published by the ONS looks at GDP, production and trade in the first quarter of the year and in most of Q2. In the first quarter of 2023, GDP grew by 0.1% because of expansions in the services and construction sectors. Last winter, due to high energy prices and the anticipation of a recession, was a tough time to be a manufacturer, especially in the chemical industry where gas is used as feedstock and energy source. UK chemical production fell 4.7% in 2022 compared to 2021; however, the fall in output at the end of the year compared to the start was even more severe. In the first quarter of 2023, chemical production grew by 1.3% from the previous quarter, but in April and May, it decreased by 0.3% and 0.6%, respectively.

The value of UK chemical trade fell in the first quarter of 2023 as both exports and imports contracted. In the first two months of Q2, EU imports increased, whilst exports towards non-EU countries exceeded the ones towards EU member countries.

Consumer Side Inflation in the first quarter remained double-digit but fell throughout the second quarter, with June's inflation decelerating to 7.9%. For producers, inflation is easing, and in the chemical industry, input prices deflated for two months in a row, while output prices deflated only in June. The deflation of chemical input and output prices is the symptom of low demand and falling sales. With uncertainty in the market and the cost of living crisis, chemical pay has gone up, but manufacturing vacancies have decreased and redundancy rates also spiked in the first quarter of the year.

Turning to our survey, it was clear that after a challenging end to 2022 and a slightly better start to 2023, the second quarter brought additional strain to chemical producers as more contractions in sales were reported. Most respondents experienced a decrease in input and energy costs from the previous quarter, but output prices also decreased.

The consensus is that the third quarter will not differ significantly from the second one, but almost a third of respondents expect further contractions in sales. Respondents exhibit more positivity in terms of supply chains, as roughly 30% expect decreases in input and energy costs but are still pessimistic regarding output prices and margins. Data highlights more optimism for the next 12 months, but that is related to the current levels of business, which are affected by inflation, intricate geopolitics, tight monetary policy, lack of government action, and weak demand.

This quarter we added a challenge: 'weakening demand', which 58% of respondents deemed to be the main issue for the past quarter and the upcoming ones. 'Labour cost increases' and 'energy prices increases' were ranked second and third, respectively. Weakening demand and the issues related to the workforce are expected to worsen, whilst raw materials-related challenges and energy ones to remain unchanged or get marginally improve. I would like to thank all who completed the CIA Q2 Business Survey. Thanks to their contributions, this quarter, we were able to collect responses from 60 individual companies.

Finally, most members have not been able to take advantage of the Capital Allowance Scheme. These reactions suggest that the scheme does not have the magnitude, duration and framework necessary to bring real benefits to manufacturers. When questioned about the Inflation Reduction Act (IRA), 75% of respondents that have experience with the scheme noticed a higher level of investment in the US and are vocal about the necessity of a similar programme to attract investment to the UK. In the upcoming Autumn Statement, members would like to see that most companies were asking for further framework and financial incentives around the Net Zero transition, improvements to current energy schemes and further subsidies throughout winter, and a consistent long-term industrial strategy. Finally, to put the labour data into context, we asked members what type of profession was the hardest to recruit, and the most common response was engineers, whilst numerous companies had to enforce redundancy programmes as margins contracted even further during the quarter.

Steve Elliott
Chief Executive
Chemical Industries Association

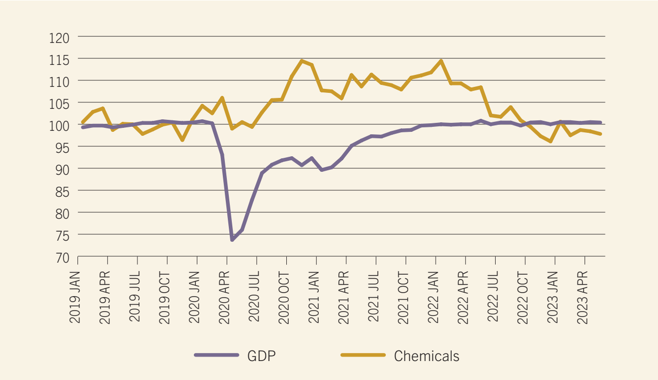
The survey data presented in this report was collected from CIA members between 28 June and 12 July 2023. The macroeconomic data, predominantly sourced from the Office for National Statistics was gathered up to the end of July 2023.

The year remains challenging for UK chemical industries

GDP and Chemical production

Focusing on GDP, the UK economy narrowly avoided entering a recession, defined as two consecutive quarters of negative growth, in the final quarter of 2022 as growth was flat. Initially, forecasters expected a recession in the second quarter of 2023, but official data showed that the UK economy is more resilient than expected. Even if a recession in 2023 is unlikely, the year will remain challenging, especially for the production sector. UK GDP grew 0.1% in Q1 2023 compared to Q4 2022. In April 2023, it expanded by 0.2%, whilst in May there was a monthly contraction of 0.1%. In Q1, the growth driver was the construction sector, whilst production and services' output expanded by less than 0.1%, and agriculture contracted in the quarter. In the second quarter, service industries picked up as they recorded expansions by 0.3% and less than 0.1% in April and May, whilst both the construction and production services heavily contracted. Production output fell by 0.2% in April and 0.6% in May, and construction output fell by 0.9% in April and 0.2% in May.

Graph 1: Index figure of GDP and Chemical Output, Sept 2019-May 2023, Q4 2019 = 100



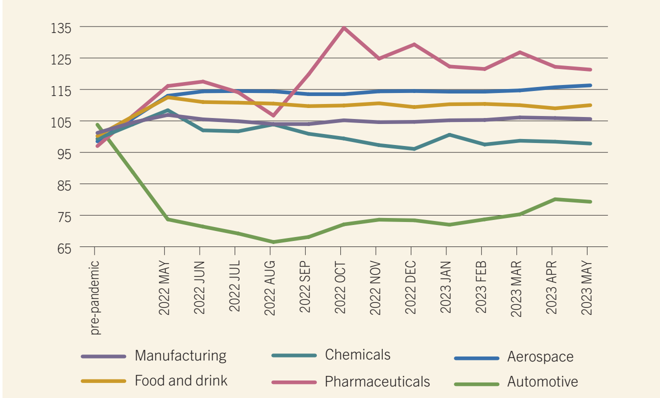
Source: CIA Analysis of ONS data

Turning to the chemical industry, Graph 1 displays the monthly index of UK GDP and chemical production between September 2019 and May 2023. In Q4 2022, chemical output reached the lowest level since Q4 2018, for this reason whilst in the first quarter of 2023 chemical output expanded by 1.3% from the previous quarter, it was 12.2% below Q1 2022's levels and at the fourth lowest recorded level since Q4 2018. Considering monthly growth, in April 2023, output contracted by 0.3% and by a further 0.6% in May, foretelling that chemical output in Q2 was lower than in Q1.

The CIA expects UK chemical production to fluctuate between flat growth and contractions resulting in lower output at the end of the year compared to the previous one. One of the main causes of the CIA's **wary** view on output is weakening demand as other production industries that use chemicals as inputs are also struggling, and there is anecdotal evidence of cheaper Chinese and Indian imports that could take over the market. Nevertheless, lower input prices (discussed further in the report) and the expected end to destocking are grounds for a more positive outlook in the coming year.

Graph 2 compares the monthly index of production for the chemical industry to the UK's food and drink, pharmaceutical, automotive, and aerospace industries that, along with the chemical industry, are colloquially referred to as the 'Manufacturing Five' or 'M5' industries.

Graph 2: Index figure of M5 output, pre-pandemic level and May 2022-May 2023, 2019 = 100



Source: CIA analysis of ONS data

In the first quarter of 2023, manufacturing output contracted by 1.8% from the same period in the previous year but expanded by 0.7% from Q4 2022. The relative expansion in Q1 2023 of manufacturing was driven by expansions in chemical (1.3%), automotive (1.0%), aerospace (0.3%), and food, drinks and tobacco output (0.2%), whilst downward pressure came from the 4.7% contraction in pharmaceutical output.

Despite chemicals' and automotive's expanding in Q1, their output levels remain 0.4% and 29.0% below pre-pandemic levels, respectively. Pharmaceutical output increased by 27.3% from pre-pandemic thanks to the high demand for medicines and vaccines caused by the medical emergency. Food, Drinks, Tobacco, and Aerospace also expanded since the last quarter of 2019 by 10.0% and 16.1%, respectively.

Moving on to the monthly output represented in Graph 2, the aerospace output is the only one to grow since the beginning of the year. Aerospace output expanded by 0.9% and 0.5% in April and May, respectively. Automotive output – light blue line– contracted severely during the pandemic and is yet to recover even if output grew by 6.4% in April and contracted by 1.0% in May. Food, drink and tobacco output – orange line – remained roughly stagnant as the 0.9% contraction in April was offset by a 0.9% expansion in May. Finally, pharmaceutical output – yellow line – declined significantly both in April and May, with 3.6% and 0.7% contractions respectively.

If we compare May 2023 to May 2022, chemical, food, drinks, and tobacco output contracted, while pharmaceutical, automotive and aerospace's ones expanded.

Consumer Side Inflation

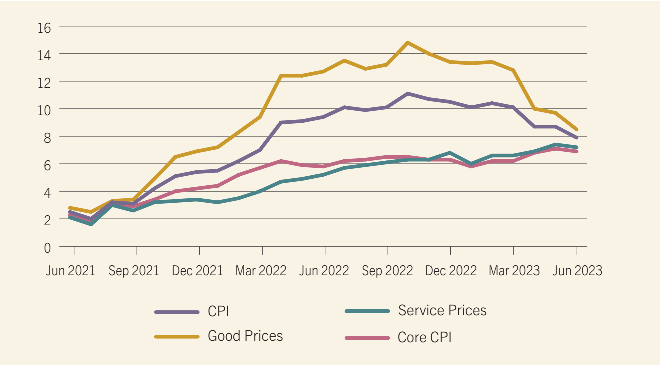
Moving on to inflation, despite the tight monetary policy instituted by the Bank of England (BoE) to battle inflation, it is stickier than expected and remains a considerable economic challenge as we enter Q3. In Q1, the headline inflation rate for consumers was 10.2%, decelerating to 8.4% in Q2. Focusing on monthly data for Q2, in April and May inflation rose by 8.7%, and in the year to June it rose by 7.9%. Even if inflation is heading in the right direction, Q2 inflation levels are above what the BoE forecasted in May (8.2%) and significantly higher than the ones forecasted in February by the Office for Budget Responsibility (6.9%). Q2 inflation remains high also by international standards as European, North American and

Asian competitors record lower levels. In the Euro Zone Q2, inflation was 6.2%, in the US 4.0%, and in China 0.1%.

How does monetary policy work?

The Bank of England regulates prices through affecting interest rates. By increasing interest rates, the opportunity cost of spending money increases as gains from money saved are higher, this prompts consumers to save rather than spend. By limiting consumer spending, interest rates decrease demand for goods and services forcing sellers and producers to decrease their prices. Nevertheless, keeping prices under control through tight monetary policy is likely to induce a recession – like is happening in Germany and is predicted to happen in the US. Even if the possibility of a recession is daunting, flat growth coupled with high inflation can cause more harm to citizens and businesses.

Graph 3: Annual Growth rate of CPI, core CPI inflation, goods and services prices from June 2019 to June 2023



Source: CIA analysis of ONS

Graph 3 shows prices of goods and services and consumer-side inflation over the course of the last two years. The current inflation rates are linked to two main causes: the reopening of the economy after lockdowns and the energy crisis resulting from Russia's invasion of Ukraine. As the economy reopened during the last quarter of 2020, consumer demand increased, leading to an initial wave of inflation. In April 2022, with the beginning of the Russian-Ukraine conflict, energy prices increased, causing further price increases. The yellow line shows the price of goods from June 2021 to June 2023; between March and April 2022, goods inflation went from 9.4% to 12.4%, and it continued to increase until October 2022, when it reached 14.8%. The increase in goods' prices drove services and CPI up.

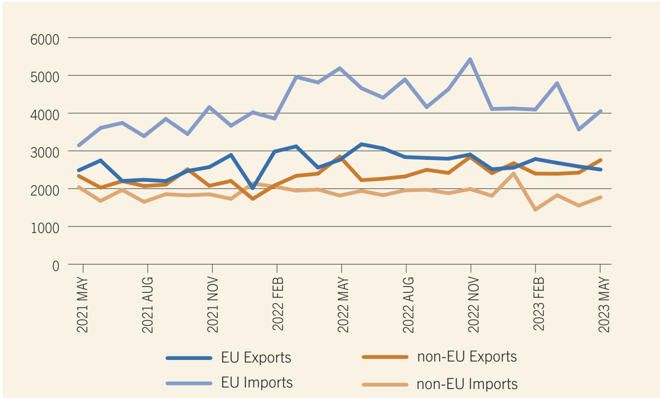
Initially, goods' prices drove up CPI, but after the peak in October, goods prices have been falling relatively steadily. The same cannot be said about service prices that are continuing to increase and putting upward pressure on CPI. These increases result from higher prices of goods used to provide services (e.g. food for restaurants or parts for mechanics) and resilient consumer demand.

Finally, the pink line represents core CPI. Core CPI is CPI without the cost of energy, food, tobacco and alcohol. It is the type of inflation that consumers can influence by changing their consumption trends and the one that the BoE targets. Core CPI has been increasing since December 2022, suggesting that consumer spending is not being overly impacted by high prices and interest rates, probably thanks to the high level of savings accumulated during the pandemic.

Trade

Alongside the publication of official GDP and production data, the ONS published the value of trade in Q1 and for the first few months of Q2. The value of chemical exports in Q1 2023 was £15.6bn, £0.3bn lower than in Q4 2022. Imports also had a quarterly decrease as the value of imports for Q1 was £18.7bn, down from £19.8bn in the previous quarter. Since the figures do not account for inflation, some of the decrease is linked to a quarterly decrease in inflation from Q4 2022 to Q1 2023, but inflation does not account for the whole drop. Moreover, due to the nature of the chemical industry, the 5.7% drop in imports is not the result of higher domestic production, rather of industries that use chemicals as inputs slowing their production.

Graph 4: Chemical monthly trade with EU and non-EU countries from May 2021 to May 2023, £ (thousands)



Source: CIA analysis of ONS data

Graph 4 represent chemical imports and export towards EU and non-EU countries. The two blue lines represent trade flows with the EU and the two orange lines trade flows with non-EU countries. Exports are illustrated by the two darker lines (dark blue and dark orange) and imports are the two lighter lines (light blue and light orange).

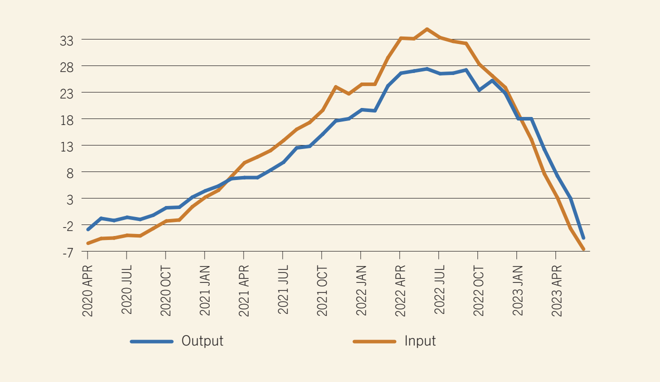
Focusing on imports first, the light blue line is consistently higher than the light orange line indicating that imports from EU countries are higher than imports from non-EU countries. In the first few months of Q2, the majority of imports came from the Netherlands but the biggest increase was in imported chemicals coming from Ireland as they increased by 75.2% in May compared to April. The most non-EU imports come from the US even though they have decreased from Q1 2023.

Moving on to exports, the dark lines are much closer together and they intersect multiples times indicating that the UK exports similar values of chemicals towards EU and non-EU countries. Looking at the overall trend of the dark blue line over the last year we can notice a slight downward trend suggesting that exports towards EU countries are marginally decreasing, whilst the opposite trend is visible for the dark orange line indicating that exports towards non-EU countries are increasing. Focusing on the most recent data for export, in May chemical exports towards non-EU countries generated more money than towards EU countries.

Even if trading with non-EU countries is intensifying, the UK remains highly dependent on the EU for chemicals and efforts to maintain a stable relationship with the continent's trading block is essential for the future of UK manufacturing.

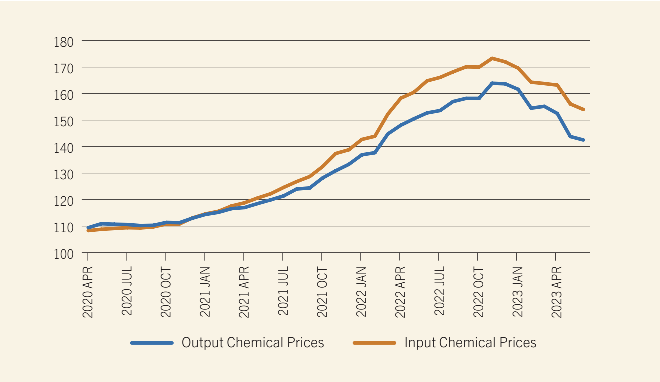
Prices

Graph 5.1: Chemical Input and Output Prices Growth Rates, Apr 2020-May 2023



Source: CIA analysis of ONS data

Graph 5.2: Input prices into Manufacturing and Chemical production, and Output prices for Chemicals



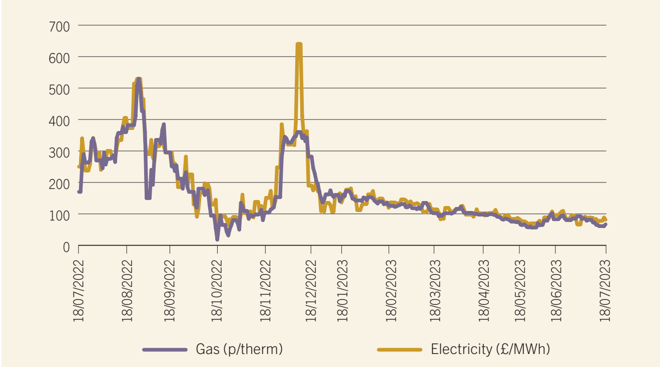
Source: CIA analysis of ONS data

The ONS revised data shows that since February 2023, output prices have been growing quicker than input prices, as indicated in Graph 5.1 where the blue line became higher than the orange one in February. Focusing on the last few months, chemical input prices deflated in May and June 2023, meaning that they were lower than in the same months in 2022; chemical output prices also deflated but only in the year to June 2023 and at a slower rate than input prices.

Just as is the case for general inflation, deflation and decreases in prices tends to be the consequence of low demand, so whilst it is positive to see chemical input prices fall after two years of soaring inflation, it is symptoms that demand for chemical inputs is lower. Nevertheless, it would be overly simplistic to identify low production as the sole cause of this deflation, as lower demand for energy and the easing of supply chains also had a key role.

Graph 5.2 shows the level of chemical input and output prices. In the graph, input prices are represented by the orange line and output prices by the blue one; the fact that the orange line has been consistently above the blue one for the past two years indicates that input prices have been higher than output prices. Even if output prices have been growing quicker than input prices since February, input prices remain 8.1% higher than output prices, which continues to put a toll on margins.

Graph 6: Day-ahead UK gas and electricity prices over the last year, May 2022-April 2023



Source: CIA Energy Price Dataset partnered with InspiredEnergy

Graph 6 displays the day-ahead wholesale gas and electricity prices in the UK over the last year. Although remaining significantly higher than the long-run average, recent UK gas and electricity prices have settled at the lowest level since summer 2021, but they remain over three times higher than pre-pandemic. Moreover, even if prices have been less volatile in the past few months, the situation has not improved as UK energy storage and production facilities still lack the capacity of meeting industrial and domestic demand during winter.

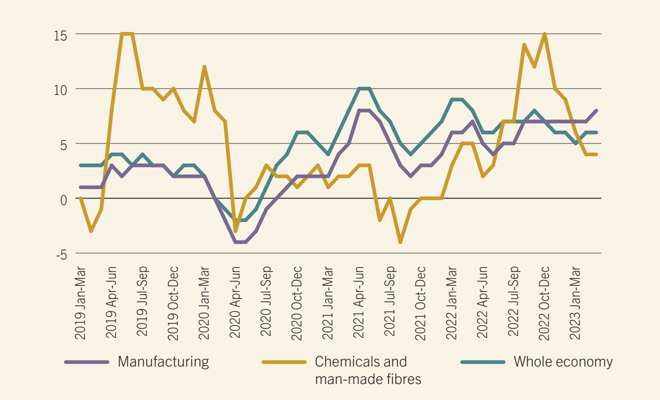
In terms of energy support, since April 2023, the Energy Bill Relief Scheme has been substituted by the Energy Bill Discount Scheme. The new scheme partially subsidises energy prices as it covers the band between 209p per therm and 407p per therm; anything below or above that price point will be responsibility of the user.

Labour market

The current labour market situation is intricate, with economy-wide difficulties recruiting, significant pay increases to keep up with inflation, and high retirements and redundancies. This situation is extremely complicated for manufacturers. Through Brexit, numerous European skilled workers left the country, and many STEM students prefer to go into industries-like consulting or finance– deemed more profitable.

Looking at economy-wide data, in May, payroll employees were 30 million, 1.03 million above pre-pandemic and unemployment rates were the same as pre-pandemic. Moving on to redundancies and vacancies. From October 2022 to April 2023, there were more redundancies in the manufacturing sectors than in the general economy as a result of uncertainty in the market and high cost of producing compared to profits. The impact of uncertainty is also evident in the decline of vacancies in manufacturing sectors. Vacancies started decreasing in June 2022 due to high levels of uncertainty and higher wages demanded, which led numerous companies to start redundancy programmes and to freeze hirings.

Graph 7: Growth rate of total pay in the chemical industry, manufacturing sector, and whole economy, Jan 2019-Feb 2023



Source: CIA analysis of ONS data

Graph 7 shows the growth rate of pay in the economy, manufacturing sector, and chemical industry. Average total pay, which includes bonuses and one-off payments, and regular pay which does not, rose 6.4% and 6.7% in the three months to May compared to the same period in 2022. In real terms (adjusted for CPIH inflation, which in May 2023 was 8.7%) this constitutes pay cuts of 2.3% and 2.0% respectively. In manufacturing industries, total pay rose 7.5% and regular pay 7.6%. The chemical industry saw an increase of 3.8% in total pay and of 5.0% for regular pay. Due to the high levels of CPIH inflation, these resulted in real terms pay cuts of 4.9% and 3.7% respectively.

Rounding up the official data

During the first and second quarter of 2023, most of the difficulties businesses faced in 2022 remained widely unchanged. UK GDP expanded by 0.1% in Q1, mainly driven by the construction sector, whilst production and service contracted. In April and May, production continued to contract whilst services expanded. Inflation remains high, despite the tight monetary policy established by the Bank of England. Energy prices that sparked current levels of inflation, are stable at an equilibrium three times higher than pre-pandemic, but with winter approaching future spikes are to be expected.

In Q1, chemical output expanded by 1.3% from the previous quarter but it was 0.4% below pre-pandemic. In April and May, chemical output continued falling by 0.3% and 0.6% respectively. Moving on to chemical trade, the UK remains highly reliant on the EU as over a third of imports come from member countries, but trade is intensifying with non-EU countries, especially in export.

Prices in the chemical industry also started stabilising, with input prices deflating for two months in a row. This deflation is the result of more stable energy prices as well as lower demand.

The UK's labour market remains challenging as companies are experiencing: difficulties recruiting, pressure to increase pay to keep up with inflation, retirements and redundancies. In the chemical industry, total pay-including bonuses and one-off payments– rose by 3.8% in May 2023 but resulted in a 4.9% pay cut due to the high inflation levels.

Survey results

About the survey

At the close of each quarter, we survey member companies of the Association to get on-the-ground data about current trading conditions and views on what lies ahead. The information from this is incredibly useful in our work and we are grateful to all who respond.

The CIA's Q2 2023 Business Survey was live between the 28th of June and the 12th of July 2023. The survey received responses from around 50% of CIA membership. This edition of the survey was split into three sections. The first and second sections contained the standard industry performance and challenges & opportunities questions. The third section focuses on what respondents would like to see in the Autumn Statement and considerations on their workforce. Three questions in the industry performance section asked respondents whether the 19 variables listed below had increased, decreased or stayed the same in the second quarter of 2023 compared to the first quarter of 2023 and what member's expectations were for these variables in the third quarter of 2023 and 12 months' time.

Industry performance variables:

1. Total sales
2. Domestic sales
3. Exports
4. EU exports
5. Rest of the world exports
6. New orders
7. Production levels
8. Capacity utilisation
9. Employee numbers
10. R&D spend
11. Business investment
12. Your level of business optimism
13. Time to deliver
14. Raw material (input) prices
15. Cost of importing
16. Cost of exporting
17. Your energy costs
18. Finished goods (output) prices
19. Your company / site profit margins

When displaying the industry performance data, diffusion indexes are used. These are easy-to-interpret statistical tools that can be read in the same way as S&P Global's Purchasing Managers Indexes (PMIs). Therefore any figure below 50 indicates a contraction, above 50 an expansion, while 50 means it remained constant. To compute these indexes, we combined the percentage of respondents that reported experiencing an increase with half of those that reported experiencing no change.

Industry performance

Performance in final quarter

Table 1 displays the diffusion indexes for the 19 variables mentioned in 'about the survey' and the percentage of respondents that reported experiencing a decrease in the variables. The first column is the diffusion index for the performance in the current quarter, the second column contains the diffusion index for what was expected for the second quarter of 2023 when respondents were asked in the CIA's Q1 2023 Business Survey, the third column contains the diffusion index for the performance in the first quarter of 2023, and the final two columns contain the percentage of respondents that experienced a decrease of that variable in the current quarter and the previous one. This allows comparisons between the performance in the second quarter of 2023 compared to expectations and the prior quarter.

Table 1

	Q2 Actual	Q2 Expected	Q1 Actual	Percentage that experience a decrease in Q2 2023	Percentage that experience a decrease in Q1 2023
Total sales	25.0	57.1	44.6	55.0%	33.9%
Domestic sales	29.2	50.0	41.1	50.0%	25.0%
Exports	29.2	51.8	44.6	45.0%	30.4%
EU exports	27.5	52.7	40.2	45.0%	32.1%
Rest of the world exports	30.0	51.8	43.8	45.0%	32.1%
New orders	28.3	58.9	40.2	53.3%	35.7%
Production levels	27.5	53.6	43.8	51.7%	35.7%
Capacity utilisation	27.5	53.6	45.5	53.3%	33.9%
Employee numbers	36.7	47.3	45.5	31.7%	25.0%
R&D spend	47.5	50.0	50.0	11.7%	12.5%
Business investment	42.5	50.0	47.3	25.0%	25.0%
Your level of business optimism	23.3	50.9	41.1	58.3%	39.3%
Time to deliver	45.8	47.3	45.5	16.7%	14.3%
Raw material (input) prices	41.7	42.9	47.3	41.7%	39.3%
Cost of importing	47.5	48.2	52.7	18.3%	16.1%
Cost of exporting	49.2	48.2	49.1	16.7%	16.1%
Your energy costs	30.0	41.1	44.6	48.3%	41.1%
Finished goods (output) prices	40.0	42.9	49.1	35.0%	28.6%
Your company / site profit margins	26.7	51.8	40.2	51.7%	39.3%

Source: CIA Q2 Business Survey

Key take away

- The second quarter was tougher than the previous one as over 50% of respondents saw their sales decrease because of weaker domestic demand.

Looking at previous surveys' data. Since the third quarter of 2022, quarterly sales have decreased, with the most serious contraction in the last quarter of 2022 as 56% of respondents experienced decreases, and some sites preferred to temporarily shut down to limit costs. At the beginning of the new year, sales did not pick up; the first quarter of 2023 was better than the last quarter of 2022, but still almost a third of respondents experienced further decreases in sales and production. When considering the baseline and the past year's trend, 58% of companies reporting further contractions in sales is extremely worrying. The fall in sales was spread between exports and domestic sales, with domestic sales contracting for more respondents.

Four consecutive quarters of contractions and tight margins led to falls also in employee numbers, R&D spending, and business investment. These variables are often referred to as the 'slower moving variables' because they tend to be less volatile quarter-on-quarter due to plans being made on a multi-year basis.

On the cost front, there is more positivity. Almost 41% of companies experienced a decrease in raw materials prices in Q2 2023 compared to Q1 2023, 2% more than in the previous quarter and roughly 7% more companies reported lower energy costs. For what concerns trading costs, 2% more companies saw the cost of importing decrease and the same amount of companies saw the cost of exporting fall from Q1. On the other hand, the proportion of members experiencing a decrease in the output price has increased by 8%. Delivery times worsened, and with all this data in mind, chemical business leaders' optimism fell in the first quarter of 2023, as almost 60% of respondents reported a decrease (up from 40% in the previous quarter).

Expectations for the second quarter

Table 2 displays the diffusion indexes for what is expected for each of the 19 variables in the third quarter of 2023 and the percentage of respondents that expects to see an increase.

Table 2

	Q3 Expectations	Percentage of respondents that expect an increase
Total sales	44.2	21.7%
Domestic sales	38.3	10.0%
Exports	45.8	16.7%
EU exports	43.3	15.0%
Rest of the world exports	45.0	18.3%
New orders	47.5	25.0%
Production levels	47.5	25.0%
Capacity utilisation	46.7	23.3%
Employee numbers	40.0	8.3%
R&D spend	43.3	3.3%
Business investment	46.7	13.3%
Your level of business optimism	40.8	13.3%
Time to deliver	46.7	3.3%
Raw material (input) prices	40.0	11.7%
Cost of importing	49.2	10.0%
Cost of exporting	49.2	11.7%
Your energy costs	39.2	11.7%
Finished goods (output) prices	40.0	10.0%
Your company / site profit margins	38.3	10.0%

Source: CIA Q2 Business Survey

Key take away

- CIA members, disillusioned after four consecutive quarters of lower sales, expect slight contraction across all variables. On the supply side, with overall inflation falling, companies expect their input and energy costs to continue decreasing, but they also expect a fall in output prices and margins.

Due to four consecutive quarters of sales contracting, respondents are less optimistic than in the previous survey as they expect slight contractions across most variables during the third quarter. In terms of total sales, 30% of respondents expects a decrease and only 13% and increase. The decrease is led by domestic sales which are expected to increase only by 10% of respondents whilst exports are expected to increase by 17% of respondents, this indicates that chemical companies are not confident that UK demand will pick up in the short-term. There is more positivity in terms of new orders, capacity utilisations and production levels as roughly 25% of respondents expect to see these variables increase.

Focusing on the slower moving variables, further contractions are expected in employee numbers, business investment, and R&D, with the most pessimistic outlook on employee numbers as 27% of respondents can foresee a fall.

Costs are believed to further stabilise in the third quarter of 2023 as roughly 30% of respondents expects raw material and energy costs to continue falling. With demand and sales declining, almost a third of respondents assumes that output prices will decrease through the third quarter.

Expectations for twelve months' time

The data in Table 3 is derived from members' expectations over the next 12 months, and due to the nature of the survey, this data should be used as a gauge of the industry's sentiment rather than rigid forecasts. Like Table 2, this data contains an index that aims to describe if the variables will increase or decrease and the percentage of respondents that estimate an increase in the next 12 months.

Table 3

	12-month Expectation	Percentage of respondents that expect an increase
Total sales	67.5	55.0%
Domestic sales	62.5	43.3%
Exports	63.3	46.7%
EU exports	60.8	41.7%
Rest of the world exports	63.3	41.7%
New orders	66.7	51.7%
Production levels	61.7	48.3%
Capacity utilisation	65.8	51.7%
Employee numbers	43.3	13.3%
R&D spend	48.3	11.7%
Business investment	52.5	25.0%
Your level of business optimism	60.0	41.7%
Time to deliver	45.0	5.0%
Raw material (input) prices	48.3	25.0%
Cost of importing	53.3	21.7%
Cost of exporting	54.2	21.7%
Your energy costs	45.0	23.3%
Finished goods (output) prices	50.0	23.3%
Your company / site profit margins	54.2	36.7%

Source: CIA Q2 Business Survey

Key take away

- CIA members are optimistic that in a year's time production and sales will be in a better position, even if costs are expected to remain unchanged. The increased sales and similar production costs should improve margins.

Expectations over the next 12 months are positive but not as optimistic as in the previous survey. In the Q1 survey, almost 70% of respondents expected an increase in new orders and sales; in this quarter's survey, 55% expected increases in those variables. As for Q3, more respondents are optimistic about export increases rather than domestic sales.

Moving onto costs, energy and raw material costs are expected to stay unchanged while the prices of finished goods to increase marginally.

With all this data in mind and the acknowledgement that increases/decreases are based on Q2 levels, over 40% of the CIA's Business Survey respondents expect to be in a better position in 12 months' time, and 37% expect better margins.

Challenges and Opportunities

The second section of the CIA's Q2 Business Survey focused in more detail on the challenges members faced and the opportunities they identified. The first question in this section asked respondents to rank 13 challenges faced by the industry from greatest to smallest, with '1' signalling the greatest issue and '12' the smallest. Due to the change in economic circumstances and feedback from member companies, this quarter, "weakening demand" was added as a challenge.

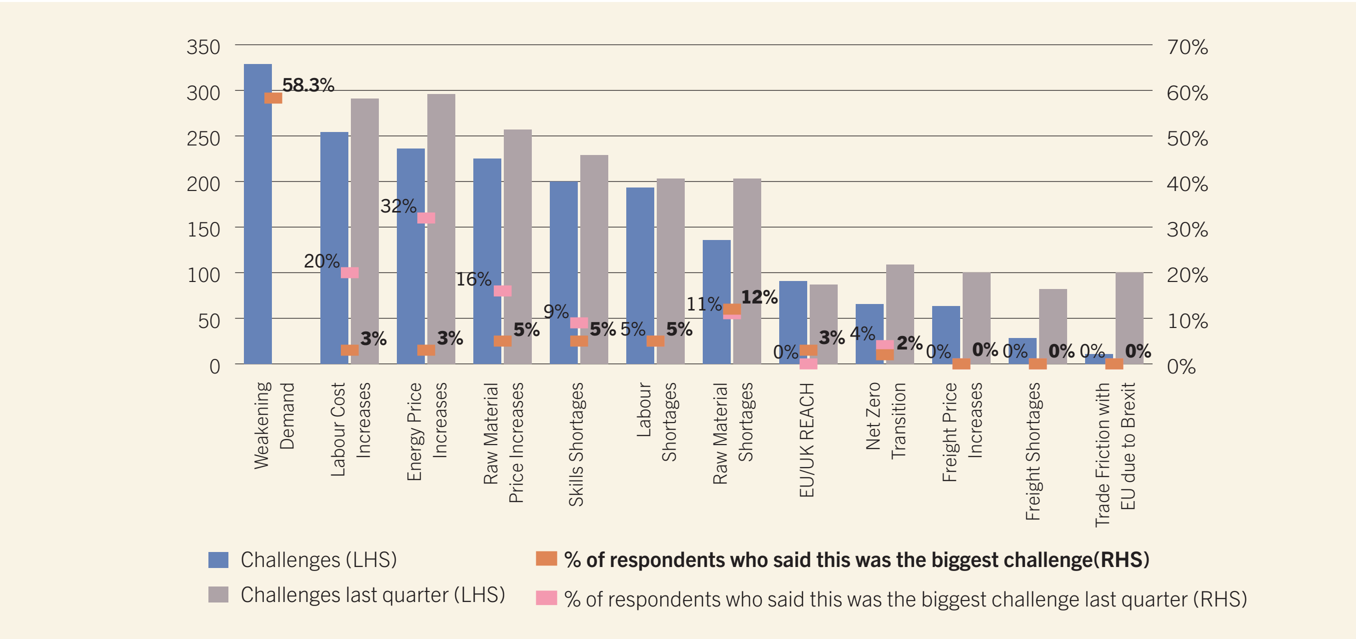
Last quarter we saw labour costs and energy prices almost jointly in the first place, even if energy prices remained the main challenge. This quarter, the newly added 'weakening demand' ranked first, followed by labour cost increases and energy price increases. The pink and orange squares in Graph 8 show the percentage of respondents that ranked each issue as their main one. The orange square on the 'weakening demand' bar indicates that 58% of respondents ranked it first; the second issue with the most 'main issue' rankings is 'Raw Material Shortages', followed by 'Raw Material Price Increases' and 'Skills Shortages', and only 3% of respondents ranked 'Energy Price Increases' and 'Labour Costs Increases' as the main challenge.

The ranking of Raw Material Shortages is extremely interesting; whilst 12% of respondents chose it as their main challenge, it ranked eight overall, suggesting that it is an issue only for materials used in certain preparations, but they do not affect the industry as a whole.

The 'smallest' challenges still seriously threaten the industry in the mid-to-long term. They, however, are not being felt as acutely as the soaring input costs, low demand, and labour frictions. Therefore, it is important that these challenges, including REACH, the net zero transition, and trade friction with the EU, are not underestimated. This point was reiterated by CIA members when they were presented with the data and the CIA will continue work in these areas opposite government and other stakeholders, especially in relation to the Net Zero Transition and perceived lack of support from the government.

The next question asked respondents whether the 13 challenges from the previous question were improving, worsening, or remaining unchanged. Table 4 displays the diffusion indexes of the answers, with figures above 50 indicating an improvement, below 50 worsening, and 50 equals no change, and the percentage of respondents that expects a worsening in the near-by future.

Graph 8: Ranking of Challenges



Source: CIA Q2 Business Survey

Table 4

Issues	Percentage of respondents that expect worsenings
Weakening Demand	68%
Labour Cost Increases	67%
Energy Price increases	10%
Raw Material Price Increases	20%
Skills Shortage	50%
Labour Shortages	30%
Raw Material Shortages	10%
EU / UK REACH	15%
Net Zero Transition	17%
Freight Price Increases	12%
Freight Shortages	2%
Trade Friction with EU due to Brexit	5%

Source: CIA Q2 Business Survey

Table 4 shows that the issues that respondents foresee getting worse are: weakening demand and labour side ones, with 68% of respondents expecting weakening demand to worsen and 67%, 50%, and 30% for labour costs increases, skills shortages, and labour shortages respectively.

The other supply-side issues are expected to improve. Improvements on the supply side (raw material and energy) are linked to how challenging the situation has been for the past two years and the hope that prices will stabilise at a level closer to pre-pandemic. **Even if the survey shows optimism regarding energy price increases, during the webinar, members were vocal about needing more government action and the energy team at the CIA continues to engage with the government to aid deliver those changes.**

Understandably, longer-term challenges remain predominantly unchanged, with the Net Zero transition being the most worrying for respondents.

Among other challenges mentioned by respondents, there are: Cheap imports from abroad that threaten to steal market share from domestic producers, loss of personnel due to low salaries compared to other sectors or companies, ageing infrastructure and lack of capital to invest, proposed site closures due to low profitability, over-dependency on other manufacturing sectors for sales, and economic factors such as inflation, investment rates, taxation, and lack of government action/support.

Moving onto opportunities, when asked what the biggest near-term opportunity was for respondents' companies / sites, understandably the responses were largely business specific however followed a few themes:

1) Improve energy efficiency and Net Zero transition
2) Potential for new investment opportunities
3) New products and new raw materials sourcing methods
4) Increasing capacity / production
5) Expansion to new markets

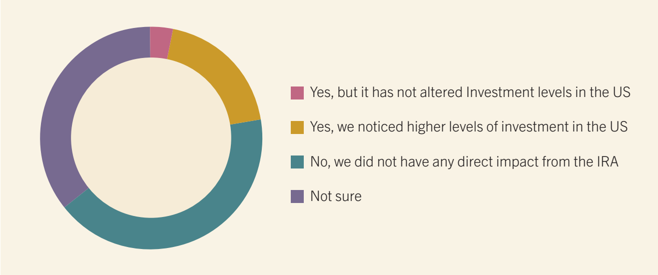
Given the state of the energy market, it is understandable that members see energy efficiency and the Net Zero transition as an area of opportunity. It was positive to see that some members felt there were opportunities to increase output or bring new products to market.

Autumn Statement

With the general election less than 18 months away, the next Autumn Statement from the Chancellor will be critical for the party, and it should give direction to industries regarding the UK response to the Inflation Reduction Act (IRA).

Since the introduction of IRA almost one year ago, UK production companies have been asking for a scheme to match it, as it is an opportunity to attract investment from abroad and to aid in meeting the Net Zero target.

Graph 9: Did your company have any experience with the American Inflation Reduction Act (IRA)?



Source: CIA Q2 Business Survey

The above graph shows members' responses when asked if they had any direct experience with the IRA and how it impacted investment levels. Whilst most respondents did not have any direct experience or were unsure of how the IRA impacted investment in the US, among the ones that had direct experience with the scheme 75% noticed higher investments.

This data, coupled with official American statistical publications, suggests that the IRA strongly impacted US business and their investment levels. In response to the IRA, the EU introduced subsidies for the Net Zero transition through the Green Deal and provided a policy framework through the Net Zero Industry Act. With our closest competitors and trading partners increasing their competitiveness, the UK requires similar subsidies and policies to support companies and attract investments.

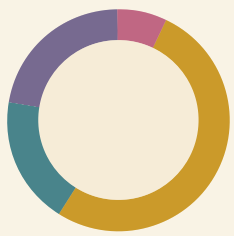
Then we asked members what type of initiatives they would like to see represented in the Autumn Statement. We asked this question for two main reasons: to know what areas our member companies would like to see from the government and to aid us in writing a submission for the Autumn Statement on behalf of the chemical industry.

Among the most common themes emerged:

- Energy support, both in terms of financial aids and development of better policies.
- Stronger incentives for companies investing in sustainable technologies or engaged in the Net Zero transition.
- Further tax incentives for R&D.
- Improvements to the Capital Allowance Scheme, both in terms of duration and type of products that it covers.
- Consistent policy for Net Zero .
- Strong Industrial Strategy.
- UK REACH and working on ensuring the continuation of a stable relationship with the EU, especially in terms of trade and custom delays.
- Apprenticeship levy reform for the development of manufacturing skills.

Members have also been vocal about the government's need to acknowledge the challenges that chemical producers face and realise the underpinning role of chemicals in the green economy transition.

Graph 10: Will the capital allowance scheme introduced in March influence any investment decisions?



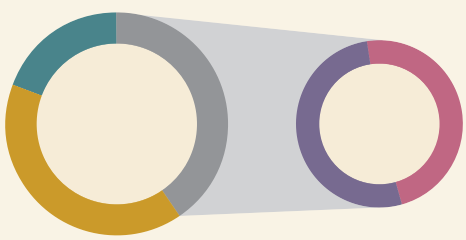
Source: CIA Q2 Business Survey

Finally, we followed up on the Capital Allowance Scheme and asked members if this or the previous scheme (Capital Super-Deduction Act) impacted their spending. Graph 10 shows that 59% of respondents did not receive any impact from either scheme, 22% were able to gain from the Super-Deduction Act but not from the Allowance Scheme and 19% invested or are planning to invest under the current scheme. This graph shows that the current scheme is not able to deliver what it is promising as investments tend to be based on multi-year decisions, which are hard to impact with short-termed policies.

Workforce: Vacancies, Retirements, and Redundancies

As mentioned in the economic situation analysis and the industry sector part of the survey, numerous companies saw the number of employees fall in the past quarters. To investigate the situation in the chemical industry, we asked respondents to share what type of workers they were struggling to recruit. Our findings show that most open vacancies are for engineers (41%), followed by operators (23%) and technicians (21%), while the amount of companies struggling to recruit scientists and researchers was significantly lower (12%).

Graph 11: Preferred place of investment



Source: CIA Q2 Business Survey

The last question on the survey focused on the workforce, we asked members if their employee numbers increased, stayed the same or decreased, and for those that experienced a decrease we asked them if it was mainly caused by the enforcement of redundancy programmes or due to experiencing resignations or retirements. The number of employees stayed the same for 40% of respondents, and it increased by 19%. Out of the 41% that experienced a decrease, slightly more than half had to enforce a redundancy programme due to low profitability, whilst the remaining 48% experienced resignations or retirements.

These trends in the workforce highlight how challenging skills and labour shortages have become since BREXIT. As bigger companies can pay higher wages, Small and Medium Enterprises are struggling with recruitment and retention, especially when coupled with the uncertainty caused by current economic challenges.

Final thoughts on the survey

Q2 Business Survey marked the fourth quarter in a row of reported fall in sales, exports, new orders and production. After a challenging end to 2022, companies saw their sales increase marginally in Q1 2023, but in Q2 2023, 58% of respondents experienced further decreases, especially for domestic sales. The consecutive months of low profitability led companies to reduce employee numbers, R&D spending, and business investment. Supply chains continued to ease as 42% saw the cost of raw materials decrease, and 47% noticed energy prices also going down. Nevertheless, output prices also fell, coupled with low sales, harmed margins, which decreased by over 50% of respondents.

Looking ahead to the third quarter of 2023, respondents are disillusioned as they expect the situation to remain unchanged with contractions in sales, new orders, and production. Costs are expected to continue stabilising, albeit at a level significantly higher than the pre-pandemic average. Respondents expect input prices to decrease, thanks to a more favourable global economic situation, but the same trend is also expected from output prices as demand continues to fall. The outlook is more positive over the next 12 months as sales are expected to pick up and margins to improve.

When asked about challenges, the newly added 'weakening demand' ranked first, followed by 'labour cost increases' and 'energy cost increases'. Raw material price increases and skills shortages ranked fourth and fifth, followed by skills and labour shortages. Regarding future predictions, respondents expect a worsening demand and the labour market.

Over 75% of respondents with direct experience with the IRA noticed higher investments in the US, emphasising the need for the Chancellor to announce the UK's response during the Autumn Statement. The Capital Allowance Scheme did not have the desired effect on businesses as almost two-thirds of respondents are not taking advantage of the subsidy. Our members would like the Autumn Statement to provide a better framework for the Net Zero transition, incentivise investment, a more cohesive and longer-term industrial strategy, further subsidies and better policy in terms of energy, and improvements to the Apprenticeship levy reform and Capital Allowances Scheme. For what concerns the workforce, the hardest professionals to recruit for respondents are engineers. Finally, slightly more than half of the companies that reported a decreasing workforce had to enforce redundancy programmes due to economic uncertainty and low margins.

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