United Kingdom
Chemical Industries Association (CIA)

<table>
<thead>
<tr>
<th>Number of companies</th>
<th>Turnover</th>
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<td>3,608</td>
<td>€62.8 billion</td>
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Capital spending: Direct employees

- €5.2 billion
- 153,000

R&D investment: €5.9 billion

CHEMICAL INDUSTRY SNAPSHOT

The second-biggest industry

With £55.5 billion of revenues and £19.2 billion value added in 2018, chemicals & pharmaceuticals is the UK’s second largest manufacturing industry. Only the food, beverages and tobacco processing sector is bigger.

Offering a full product range

The UK industry is active in all key areas: basic inorganics, petrochemicals, polymers, agrochemicals, paints, detergents and personal care products, in specialties such as adhesives, flavours and fragrances, and in a host of industrial specialties including lubricants, fuel additives, construction chemicals and catalysts. It is also a global leader in pharmaceuticals.

The UK chemical industry is also closely linked to the industry for the manufacturing of rubber and plastic goods which in 2018 had a turnover of £24.5 billion, a GVA of £8.6 billion and employed 185,000 people.
Employing and investing

Businesses in the chemical industry employed 153,000 in 2018, and around half a million if you include all whose jobs depend on the industry. Public and private R&D spending in chemical and pharmaceutical manufacturing businesses was £5.4 billion in 2018, of which £4.5 billion came from pharmaceuticals.

Recovering growth

Chemical production grew by 1% in 2018 while pharmaceutical production grew by 2.9%. Both sectors have struggled in the face of uncompetitive energy costs due to ambitious climate policies in the UK paired with further reluctance for investors to commit to the UK in the face of protracted Brexit uncertainty.

Revitalising pharmaceuticals

Production of pharmaceuticals, for decades one of the fastest-growing sectors, fell sharply between 2009 and 2014 as companies sought to counter increased R&D and regulatory costs and fewer blockbuster drugs by moving production elsewhere. This led to outsourcing of active ingredient production both elsewhere in Europe, including Ireland, but also to industrializing nations with or near large consumer populations, including India, China and Singapore.

But the outsourcing trend has been called into question, because of higher-than-expected costs, extended supply chains and poor quality control in some new production locations. These factors have led to the UK’s production of pharmaceuticals slowly trend up since 2014.

The UK’s strong science base has helped R&D spending stay high but the UK has struggled to attract significant manufacturing investment, a situation we hope is alleviated with clarity over Brexit and the Government’s supportive approach with regard to Industrial Strategy.

Strong in the north

There are chemical manufacturing sites in all UK regions. Primary commodity chemicals are produced mainly in Scotland and Northern England. Feedstocks include hydrocarbons (mainly gas and refined petroleum fractions), minerals and vegetable or animal-derived oils and fats.

Clustered with customers

Sequential processing is the norm, with co-located processing clusters adjacent to industrial customers in other industries.

Close to feedstocks

North West England is the leading chemical producer, followed by Scotland, North East England and the Yorkshire/Humber areas, while the South East and East of England regions also rank highly. Locations often depend upon availability of feedstocks such as North Sea hydrocarbons, salt and limestone, and energy (originally coal).
Handy for ports

Though peripheral to the centre of the European market, all chemical-producing regions have access to good ports and many benefit from an ethylene pipeline network, while Liquefied Natural Gas (LNG) re-gasification terminals complement natural gas supplies from the North Sea and Europe.

Investing to cut costs

Recent investments underpin long-term viability by enabling several petrochemical crackers to use cheap ethane from the US, landed in Grangemouth and Teesside.

Building on knowledge

Speciality chemicals and pharmaceuticals are more widely distributed. In recent years pharmaceutical R&D has
increased in South-East and Eastern England, close to the renowned universities of Oxford and Cambridge.

**HOW ARE WE DOING?**

**Strengths**

- Ethane import infrastructure and three crackers able to use ethane as a feedstock
- LNG import and re-export facilities
- Several closely integrated clusters
- An extensive ethylene pipeline network
- Modern chlor-alkali and derivatives production based on membrane technology
- Strong exports to geographically diverse markets
- High resource efficiency
- Strong pool of highly-skilled researchers and staff
- Highly innovative, backed by exceptional research and university infrastructure
- Excellent labour relations
- Strong safety and responsibility culture and performance in production and distribution
- Able to satisfy sophisticated consumer demands
- Improving public perception
- Heightened political recognition due to Brexit and new Industrial Strategy

**Weaknesses**

- The uncertainty of Brexit and the medium to long-term impact on investment
- Fragmented ownership of plants within clusters can lead to non-optimal long-term strategies
- Energy prices are globally uncompetitive, driven up by EU and UK climate policies while US Middle East and Russian rivals access cheap hydrocarbons
- English and Scottish moratorium on shale gas exploration
- Mature European market: growth is faster in Asia and the US
- Scarcity of skilled craft workers because of ageing and competition from other sectors
- Relatively weak domestic manufacturing base despite strengths in automotive, aerospace and pharmaceuticals

**OUR CONTRIBUTION TO A COMPETITIVE EUROPE**

**Strengthening strategic planning**

In 2014 the UK chemical industry established a sector partnership with Government to address long term growth based on competitive energy; reinforced and new supply chains; and collaborative innovation. Against the backdrop of a new industrial strategy from Theresa May’s Government in 2017, this Chemistry Growth Partnership was revised with a new strategy published in November 2018. This has been followed by the November 2019 submission of a “Sector Deal” – a collective industry proposal to Government aimed at public/private investment in transformational projects tackling waste, decarbonization and broader sustainability challenges with the aim of strengthening chemistry-related supply chains and regional clusters. This represents a good opportunity for the UK chemical industry given it is located in a number of northern clusters – especially Humberside, Teesside, the north west, Yorkshire and Scotland (Grangemouth).
Putting science to work

The UK government wants the UK to be the world’s most innovative economy and through the Industrial Strategy, has committed to reaching the target of 2.4% of GDP investment in Research and Development (R&D) by 2027. As a first step to reaching the target, the Government announced an additional investment of £7bn for R&D over 5 years (from 2017-18 to 2021-22) as part of the National Productivity Investment Fund. This raises public investment in R&D from around £9.5bn per annum in 2016-17 to around £12.5bn per annum in 2021-22 – the biggest ever increase in public funding of R&D.

Working together

The long term growth ambitions of the Chemistry Council and its proposed Sector Deal has seen strong supplier/customer collaboration. For example, projects aimed at delivering more sustainable materials for consumer products; waste to feedstock opportunities and advanced materials for batteries are helping build strong links between chemical businesses, academe, waste companies and the consumer product and automotive industries. Chemical industry links with UK academic centres remain strong, although R&D spending intentions are inevitably being influenced by Brexit uncertainty and related future access to talent and the EU’s Horizon funding programmes.

Navigating Brexit

Minimal disruption to existing trade and investment flows remains the overall objective under Brexit. The industry – both in the UK and across the EU27 – is well positioned in terms of preparation, profile and influence to ensure that its interests are best represented in any new trade relationship that emerges. More immediately, the UK industry will be looking for a positive response from the British Government to its Sector Deal project proposals – especially as many of these are designed to address the growing societal concerns over climate change, plastics and waste and chemicals in the environment.

Landscape of the European Chemical Industry Website:
http://www.chemlandscape.cefic.org/country/united-kingdom/