A CORNERSTONE OF THE EUROPEAN ECONOMY

The European chemical industry is of major importance for economic development and wealth, providing modern products and materials and enabling solutions in virtually all sectors. It is a wealth generating sector of the economy, and a valuable part of Europe’s economic infrastructure. It aims to provide solutions for the achievement of a competitive, low carbon and circular economy in Europe and beyond.

Industry is the biggest customer for EU chemicals
EU CHEMICAL INDUSTRY SNAPSHOT

The chemical industry generates 1.1 per cent of EU gross domestic product (GDP).

The European chemical industry is highly successful. Traditionally, it has been a world leader in chemicals production.

With 1.14 million workers and sales of €507 billion (2016), it is one of the largest industrial sectors and a leading source of direct and indirect employment in many regions.
Cefic supports the Commission’s goal for industry to contribute 20% of GDP by 2020. That’s a bold ambition, not an absolute target. Today, industry contributes about 15% of GDP, and industrial investment is declining. As investment share in primary production falls, Europe is losing ground in technological capability, and European value chains are at risk.

**On a promising trend**

According to EU Commission Business Survey data, chemicals confidence is far above the long-term average. Production in the EU chemicals sector grew 3.8% from January to November 2017 compared to the same period of 2016, with output rising in most chemicals sub-sectors. Chemicals output is still 1.5% below the first quarter of 2008 but close to that level.

**Closer to its pre-crisis level**
ASIA RISING

World chemicals sales were €3,360 billion in 2016, up 0.4% from €3,347 billion in 2015. This is not spectacular growth. The modest recovery was largely driven by China, where chemicals surged by €50.8 billion to reach €1,331 billion.

Asia forges ahead

World chemical sales: geographic breakdown

World chemicals sales (€3,360 billion in 2016)

Europe still strong on sales

The EU chemical industry ranks second by sales, a whisker ahead of the United States. Including non-EU countries, total European chemicals sales reached €597 billion in 2016, or 17.8 per cent of world output. But China has leapfrogged Europe to top global sales ranking.
In 2016, sales from the 30 largest chemical-producing countries totalled €3,066 billion. Twelve of the top 30 were in Asia. Their €1,916 billion of sales contributed to top 30 chemicals sales and captured 57.0 per cent of world chemicals sales.

China dominates chemicals world rankings

China plans ahead

The world landscape of the chemical industry is changing rapidly. China is planning an ambitious industrial policy strategy to take its chemical industry to the next stage of development – a strategy outlined in the “13th Five-Year Plan” on the Chinese petroleum and chemical industry. China is looking to move from “following the lead” to “taking the lead” and from a “big country” to a “great power” of the petroleum and chemical industry, leading on technology innovation and trade and prevailing in international markets.

THOUGH SALES ARE UP, EU MARKET SHARE HAS HALVED

The EU chemical industry’s share of world markets has declined in the past two decades. In 1996 EU industry sales were €334 billion – 32.5 per cent of world chemicals sales. EU chemicals sales have since grown by 52 per cent.
But worldwide, chemical sales have soared from €1,029 billion in 1996 to €3,360 billion in 2016. So the EU’s market share has fallen to 15.1 per cent in 2016. This “dilution effect” looks set to continue. Demand for chemicals is growing strongly in China, India and other emerging countries but slowly in Europe and North America, where Europe sells most of its chemicals.

A smaller share of a bigger cake

A study of EU chemical industry competitiveness commissioned by Cefic from Oxford Economics (2014) blamed high energy prices, currency appreciation, high labour costs, and regulatory and tax burdens, among other factors of the loss in competitiveness. Oxford Economics found that R&D intensity, energy prices and exchange rates strongly shaped competitiveness.

Losing competitiveness

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By 2030, world chemicals sales are expected to reach €6.3 trillion. But the EU chemical industry is expected to fall into third place, behind China, with 44% of the world market, and the US.

A shrinking slice

Projected growth in world chemicals sales 2016-2030

An export opportunity

Although competition in China's chemical market is intensifying and demand growing more weakly, China still offers a huge and attractive market both for chemical suppliers and their customer industries. In the medium-term, European
chemical producers are expected to benefit through increased exports or via local investments, thanks to their technological capabilities and innovative products, notably in consumer chemicals, automotive, electronics, food and nutrition.

THE EU REMAINS A NET EXPORTER OF CHEMICALS

Trading chemicals around the world stimulates competition, provides an incentive to develop new markets through innovation, stimulates production efficiency and helps improve the quality of human life. Historically a big exporter, EU chemical industry achieved a significant extra-EU net trade surplus of €47.3 billion in 2016.

Trade agreements could open markets further

Trade agreements with key partners such as the US, Mercosur and Japan would enable our industry to enhance efficiency and better exploit our technical strengths.

Trading benefits
The flow of chemicals between the EU and its trading partners, calculated as total exports plus imports, was valued at nearly €245.2 billion in 2016. The US was by far the EU’s biggest trading partner in chemicals in 2016, buying €30.6 billion of EU exports, and providing €23.0 billion of EU imports – nearly 22 per cent of total EU chemicals trade in 2016.

**Who buys what**
An emerging US energy advantage

Transatlantic trade flows are expected to change considerably in the next five years, because the US shale gas boom has triggered a massive build-up of new chemicals production capacity there. Any EU-US deal would therefore need to contain strong provisions regarding access for EU companies to US energy and feedstock.

Narrowing the gas price gap with the US is especially important for petrochemicals and polymers, which have lost global export competitiveness in the past decade because gas, used both as a feedstock and to provide energy for crackers, can account for as much as 60% of operating costs.

Grasping Chinese opportunities

China is the EU’s second-biggest chemicals trading partner, accounting for nearly 9 per cent of EU exports. China has become the most important growth market for global chemical companies and a major investment location. Though Chinese chemical companies are increasing their focus on specialty chemicals, the country will remain a major importer of commodity chemicals for some time to come.
HIGH ENERGY COSTS IMPACT EUROPEAN COMPETITIVENESS

The chemical industry is energy-intensive and competes globally. Anything that increases energy costs in Europe relative to our competitors has a major impact on competitiveness. Rivals in the oil and gas-rich Middle East, and more recently the United States benefit from advantageous energy and feedstock prices. The shale gas boom in the United States has greatly reduced the cost of producing ethylene, a vital chemical industry building-block.

![Average ethylene cash costs in the EU versus North America (US$/ton)](chart)

Ethylene is the foundation for production of plastics, detergents and coatings. In 2013, making ethylene in Europe was three times more expensive than in the US or the Middle East. This is boosting profits abroad and attracting billions of dollars in investment, including from European chemical companies. Falling oil prices have reduced EU costs, but EU producers remain at a cost disadvantage for producing base chemicals.

REGULATORY COSTS HAMPER EU CHEMICALS

EU legislation adds many costs for the European chemical industry, hampering its international competitiveness.
Under the REFIT Programme, the European Commission has evaluated cumulative costs arising from existing EU legislation, to better understand how legislation affects the sector’s international competitiveness, and help shape policy-making.

The Cumulative Cost Assessment (CCA) (July 2016) found that legislation cost companies in six subsectors €10 billion a year on average during 2004-2014. Regulatory costs were 12% of value added, and 30%, of Gross Operating Surplus (GOS), a proxy for profit.

The main drivers of regulatory cost are industrial emissions (33%), chemicals (30%) and worker safety (24%), together 87% of total regulatory costs. Costs ranged from 23.2% of value added in agrochemicals to 2.7% in plastics. In specialty chemicals regulatory costs were 16.7% of value added, for inorganic basic chemicals 12.1%, for organic basic chemicals 11.3% and for soaps and detergents 11.4%.
EU REGULATORY COSTS DOUBLED IN A DECADE

During 2004-2014 compliance costs were driven up by the introduction of REACH regulations in 2007, CLP in 2008, investment ahead of Seveso III in 2012 and ETS Phase 3 in 2013. Energy legislation also contributes to the rising costs, especially after 2012.

The Cumulative Cost Assessment (CCA) is a tool to show policy-makers the impact of regulation on the competitiveness of the European chemical industry. Simultaneously, the European Commission is conducting a Fitness Check on Chemical Legislation and has reviewed REACH. The aim is to ensure legislation is achieving its objectives in the most efficient way, and rectify any shortcomings without compromising health, safety and environmental protection.
Europe’s chemical industry needs a regulatory framework that is fit for purpose, consistent, cost-effective and which does not negatively impact its competitiveness vs other regions.

**CAPITAL SPENDING INTENSITY REACHED THE HIGHEST LEVEL IN EIGHT YEARS**

Investment (in absolute figures) has been increasing from 2004 to 2008, registering a positive trend at a consistent pace. The year 2010, however, experienced a steep decline compared to 2008, down by nearly 24.0%. A gradual increase occurred from 2010 to 2015. The year 2016 posted a similar range of value on chemicals investment (€21.7 billion).

In relative terms, the ratio of capital spending to added value, or capital intensity, has been increasing gradually since 2010, reaching the value of 19.4% in 2016. This is the highest value on capital intensity observed since 2009. It is however below its record level of 20.8% registered in 2000.

**Shifting investment abroad**
Chemical companies in the world invested in 2016 a total value of €212.8 billion, up from €83.8 billion in 2006. On a global basis, the level of investment in the chemicals sector was 2.5 times higher in 2016 compared to ten years ago.

China is by far and away outpacing the other economies in the world. China contributed nearly 47% of global investment, up from 25% in 2006.

EU CHEMICALS ENERGY EFFICIENCY DOUBLES

EU chemical producers, including pharmaceuticals have sharply reduced fuel and power energy consumption per unit of production. By 2015, energy intensity - energy consumption per unit of production - in the chemical industry, including pharmaceuticals, was 57.9 per cent lower than in 1990.
Further energy efficiency gains are subject to decreasing returns. Yet during the 25 years from 1990 to 2015 the industry increased output without raising energy inputs, lowering its energy intensity by an average of 3.6 per cent per year.

Improvements on energy efficiency have been spectacular during the first 15 years from 1990 to 2005. The past 10 years from 2005 to 2015 show moderate improvements.

**ENHANCING ENVIRONMENTAL PERFORMANCE**

Over the last two decades, the chemical industry, including pharmaceuticals, has made an enormous effort to minimise the environmental impact of its production. Greenhouse gas (GHG) emissions per unit of energy used fell 48 per cent between 1990 and 2015. GHG intensity – the GHG emissions per unit of production – was cut 79 per cent from 1990 to 2015.
Please note that no figures are available for Cyprus, Luxembourg and Malta.