France
France Chimie

<table>
<thead>
<tr>
<th>Number of companies</th>
<th>Turnover</th>
<th>National contact</th>
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<tr>
<td>3,335</td>
<td>€70 billion</td>
<td>Magali Smets</td>
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<tr>
<td></td>
<td></td>
<td>Director General</td>
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<td><a href="mailto:msmets@francechimie.fr">msmets@francechimie.fr</a></td>
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CHEMICAL INDUSTRY SNAPSHOT

A key contributor to the French economy

The chemical industry is a key component of the French economy. Industry added value was estimated at €18.5 billion in 2017, more than 8% of the country’s manufacturing added value, ranking chemicals third behind the food and beverages and metallurgy.

The chemical industry is a leading industrial exporter, first in front of aerospace. It accounts for more than 13% of total manufacturing exports and with a €8.6 billion trade surplus, chemicals ranks second only behind aerospace in its positive contribution to the national balance of trade.

A leading employer

The chemical industry in France has 3,335 companies, of which 94% are SMEs and nearly 6,000 production sites. Its companies employ 165,000 people, 6% of French manufacturing workers, and generate 660,000 indirect jobs.

Serving consumers too
French output ranges from basic chemicals to specialty and fine chemicals. The industry is strong in consumer chemicals, including soaps, detergents, cosmetics and perfumes.

The strategic role of the chemical industry in the development of a sustainable economy is clearly recognised by the French government and the Ministry of Industry.

**Chemical industry - key figures**

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<tbody>
<tr>
<td>3,335</td>
<td>€70 billion</td>
<td>8% of added value</td>
<td>€58.7 billion</td>
<td>&gt; 80% of total</td>
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<tbody>
<tr>
<td>165,000</td>
<td>660,000</td>
<td>€1.8 billion</td>
<td>12,870</td>
<td>7% of total chemical investments</td>
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**A major exporter**

When fine chemicals for pharmaceuticals are included, the chemical industry generated turnover of €70 billion in 2017, more than 80% was exported. Around 62% of exports go elsewhere within the European Union.

**Investing in the future**

Capital investment was €3.1 billion in 2017, equal to 17% of added value. Modernization, safety and environmental improvements accounted for 78% of the total.

Another €1.8 billion, around 10% of added value, was invested in research and development, nearly 8% of all French industrial research spending.

**Organised into competitive clusters**

In France, 31 competitiveness clusters have links to chemicals and materials. Seven are totally or partially dedicated to chemicals:

- AXELERA in Auvergne-Rhône-Alpes (Lyon)
- TRIMATEC in three regions: Languedoc-Roussillon, PACA and Auvergne-Rhône-Alpes
- IAR in Hauts de France
- XYLOFUTUR in Nouvelle Aquitaine (Bordeaux)
- ELASTOPOLE in Centre-Val de Loire
France Chimie has signed a partnership with Axelera, Trimatec and IAR to speed up innovation sharing with companies, especially SMEs.

**Key chemical innovation clusters**
# Landscape of the European Chemical Industry 2018

<table>
<thead>
<tr>
<th>1</th>
<th>MATIKEM</th>
<th>Cluster of competitiveness</th>
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<tbody>
<tr>
<td></td>
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<td>Materials biobased</td>
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<td>2</td>
<td>IFMAS</td>
<td>ITE</td>
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<tr>
<td></td>
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<td>Biobased materials/starch &amp; derivatives</td>
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<td>3</td>
<td>Pivert</td>
<td>ITE</td>
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<tr>
<td></td>
<td></td>
<td>Biorefineries/oil &amp; forest biomass/biofuel</td>
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<td>IAR</td>
<td>Cluster of competitiveness</td>
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<td>Biorefinery/bioenergy/agromaterials</td>
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<td>ARD</td>
<td>Biodemonstration plateform</td>
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<td>Sugar</td>
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<td>6</td>
<td>COSMETIC VALLEY</td>
<td>Cluster of competitiveness</td>
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<td></td>
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<td>Cosmetics &amp; Perfumery</td>
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<td>7</td>
<td>ELASTOPOLE</td>
<td>Cluster of competitiveness</td>
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<td>Rubbers &amp; polymers</td>
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<td>8</td>
<td>MATERIALIA</td>
<td>Cluster of competitiveness</td>
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<tr>
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<td>Nanomaterials/composites</td>
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<td>FIBRES</td>
<td>Cluster of competitiveness</td>
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<td></td>
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<td>Agromaterials/wood</td>
</tr>
<tr>
<td>10</td>
<td>IRT JULES VERNE</td>
<td>IRT Composite</td>
</tr>
</tbody>
</table>

| 11 | PLASTIPOLIS | Cluster of competitiveness |
|    |            | Chemistry/eco technologies |
| 12 | AXELERA    | Cluster of competitiveness |
|    |            | Chemistry/eco technologies |
| 13 | TECHTERA   | Cluster of competitiveness |
|    |            | Materials/composites/textile |
| 14 | TENERRDIS  | Cluster of competitiveness |
|    |            | Biomass/hydrogen/fuel cells |
| 15 | XYLOFUTUR  | Cluster of competitiveness |
|    |            | Wood for materials         |
| 16 | EAU        | Cluster of competitiveness |
|    |            | Used water recycling/eco technologies |
| 17 | TRIMATEC   | Cluster of competitiveness |
|    |            | Clean and non-detrimental processes for industrial sector |
| 18 | AGRIMIP INNOVATION | Cluster of competitiveness |
|    |            | Agromaterials              |
| 19 | GREENSTARS | ITE                        |
|    |            | Biorefinery/algae          |
| 20 | PASS       | Cluster of competitiveness |
|    |            | Plants extraction/flavors  |

**AUVERGNE-RHONE-ALPES**

- 1st for the production of chemicals in France
- 2nd in terms of employment
- More than 700 private companies
- 32,000 people directly employed and more than 100,000 associated
- Leading sector for exports
- 25% of French chemical research

**Strengths**

- Strategic location between Northern and Southern Europe and good local transport links and connections to the Swiss, Italian and German markets
- Main olefin provider with refinery and steam-cracker plants
- Concentration of major and international groups (Arkema, BASF, Bayer, Solvay,...) with their production sites
and research centers and many mid-cap, small and start-up companies

- Major chemical platforms as Les Roches-Roussillon, French leader in mineral and organic products and Grenoble expertise in Chlorine, phosgene and hydrogen, ...
- Top competitiveness boosters and world-class clusters for chemistry and incidental activities as Axelera, Lyonbiopôle, Plastipolis, Tenerrdis, Trimatec, Techtera…: Science & Engineering, public/private research organization studying. Collaborative platforms for innovative R&D projects as Axel’one
- Universities and engineering schools in Lyon, Grenoble, St-Etienne and Clermont-Ferrand

NORMANDY

- 13,000 direct jobs in the chemical industry
- 80% of national oil and additives production (40% of European production), 25% of olefins and 50% of plastics and elastomers
- Europe’s leading fertilizer producer
- 2nd largest producing region of medicinal chemistry products in France
- €2.5 billion invested over the last eight years to improve production and meet new environmental standards
- 1st industry exporter in the region: chemicals represent more than 20% of regional exports

The chemical industry is a key sector of the regional economy.

Strengths

- Involved in every sector of the value chain
- Highly specialised companies in petrochemicals, additives & lubricants and crop-protection
- Highly efficient port at Le Havre - Europe’s fifth-largest
- Global companies including Total, Exxon Mobil, Arkema and BASF, backed by SMEs
- Development of two industrial and chemical platforms
- Sustained innovation via Nov&atech (plant chemistry) and Nov@log (logistics competitive cluster)
- Public and private stakeholders support further industrialization

PROVENCE-ALPES-COTE D’AZUR

- 3.3% of regional GDP and 30% of regional exports
- 3rd largest region for jobs with 16,500 workers
- About 410 private companies, of which 80% are SMEs
- Port of Marseille, a gateway to Mediterranean markets

Marseille/Etang de Berre is a major cluster for liquid bulk hydrocarbons and chemicals. Demand benefits from the growth of aerospace, energy and and micro-electronics.

Further east Grasse is a long-standing centre for fragrances, whose rapid growth is driven by luxury sector and demand for bio-sourced raw materials.

Strengths

- 3 chemicals parks with international scale chemical plants (PIICTO, Berre, Lavera)
5% of European olefins production
Major chemical companies: Ineos, LyondellBasell, Kem’one, Total Petrochemicals and Arkema
40% of French capacity for chlorine and its derivatives
Strong universities and research centre support focused green chemistry under a collaborative policy

Strengthening support among regional public authorities for chemicals to play a significant role in the regional post-carbon economy. Regional policy encourages the development of SMEs and supports clusters like NOVACHIM to develop the chemical industry and foster innovation.

A number of projects are being developed involving industrial symbiosis (e.g. Power to gas).

HAUTS DE FRANCE (formerly Nord-Pas-de-Calais and Picardie regions)

- The leading industrial employer
- 492 enterprises – 13.7% of French employees
- 30,000 workers
- Global producers including Arkema, Dow Chemical Company, Procter & Gamble, BASF, L’Oréal, Roquette and SMEs
- Development of two industrial and chemical platforms (one operated by Weylchem Lamotte, another one operated by Arkema)

The chemical industry in Hauts de France is a key sector of the regional economy. Competitive and innovative, focused on high added value products, it contributes to the economic and industrial development and sustainable growth.

Strengths

A strategic geographical situation. Sustained innovation with research centers (green chemistry) and world-class competitiveness clusters focused on chemicals and materials:

- Industries & Agro-Resources (IAR), the French bioeconomy cluster
- Bio refining Cluster I-Trans (Transports)
- UP’EX (textiles)
- Materalia (materials)
- MATIKEM (materials)
- A young population and universities, engineering schools, technical centres that partner with the chemical industry
- Sound infrastructure, logistics and multi-modal transport
- A large bio-mass potential of plant materials
- Innovation fostered by the development of a green chemical industry aided by sustainable chemicals with notably bio-chemistry institute PIVERT, the Oilseed Bio-refinery of the Future, and the BRI and IMPROVE platforms.

ILE DE FRANCE
4,000 establishments of which 2/3 are small, medium and very small companies (SME/VSE)
An increase of 15% of establishments between 2010 and 2016
54,000 employees of which 1/4 are from specialty chemistry
More than 50% of women in managerial skills
Dominant activities: cosmetics, chemical trade, treatment of special wastes

With Paris as its centre Ile-de-France benefits from the presence corporate offices, production sites and research centres. Arkema, Air Liquide, Solvay, PCAS, L’Oréal, BASF, Dow Chemical, Henkel, Bayer, and Total Petrochemicals are active in the region.

**Strengths**

- High commitment to innovation
- Particularly active in Sustainable Development and Circular Economy
- Mainly focused on International
- Strong synergy between world-class universities and other laboratories fosters innovation, speeding development of green and environmental chemistry, notably CEA, CNRS and the Institut Pierre et Marie Curie
- World-class top education institutions, including Ecole Polytechnique, Chimie Paris Tech and Centrale

**HOW ARE WE DOING?**

**Strengths**

- Large industrial market with global leaders in energy, transport, aerospace, perfumes and cosmetics and, water treatment
- Renowned environmental and process expertise
- High-capacity for innovation (R&D, financing system for innovation)
- A leader in bio-based chemistry
- Fiscal incentives, notably the research tax credit
- Highly educated young people and an effective training system
- A great location and transport infrastructure
- Nuclear energy and low GHG emissions
- Many SMEs, an innovative ecosystem and strong marketing and production

**Weaknesses**

- Dependence on imported raw materials
- Low acceptance of chemical industry and products by the French public
- Too many national regulatory initiatives regarding chemicals

**OUR CONTRIBUTION TO A COMPETITIVE EUROPE**

The French chemical industry’s Strategy Committee for Chemicals and Materials, has drawn up a plan for:

- **Competitiveness** based on:
  - More innovation
  - Favourable economic, fiscal and regulatory conditions
- Long-term access to energy and raw materials at competitive prices
- A supportive business environment for chemical, industry investment
- Strong regional clusters
- Integration of chemicals and materials into promising downstream industries, such as materials, composites and healthcare

**Sustainability:** developing a sustainable economy focusing on renewable energy, resources and recycling

**Attractiveness:** offering more innovative products and technologies to customers, and aligning jobs and skills with industry prospects

**Smartening up**

France Chimie leads the SusChem National Platform and helps SMEs participate in European projects, while helping them promote their products and know-how to big chemical companies, to aid innovation partnering. France Chimie promotes regional smart specialisation and international collaboration, and is closely involved on dedicated topics between different countries (example of Bioeconomy in Hauts de France).

So it can be underlined that representation of French chemical industries is very high in the EU’s Horizon 2020 programme.

Landscape of the European Chemical Industry Website:

http://www.chemlandscape.cefic.org/country/france/