

Statement Dr. Utz Tillmann,

General Manager of the German Association of Chemical Industries,

on 15 June 2015,

at opening press conference at ACHEMA Frankfurt

(The spoken word takes precedence)

Dear Ladies and Gentlemen:

Products "made in Germany" are in high demand throughout the world. Cars, machines and chemical engineering products are among the strongest German exports. Customers value the products' high level of technological advancement. This technological advancement ensures a particular quality as well as innovative characteristics. In connection with the highly efficient manufacturing processes in Germany, resource conservation is also possible. This innovation capacity is not without reason:

As a centre of innovation, Germany is amongst the best in the world. A fact confirmed by the World Economic Forum ranking: in the WEF ranking, Germany placed sixth out of 144 countries. Germany is only ranked¹ behind Switzerland, Japan, and the US as well as Finland and Israel.

As a centre of innovation, Germany's good ranking was significantly influenced by its industrial sector. Almost 70 percent of all investments in research and development come from the commercial business sector. At the core, Germany's innovation capability is due to several factors: the most modern chemical and process engineering technologies, well-educated and trained specialists, high-quality research institutions, and close cooperation between science and industry in addition to close collaboration with the core industries in the industrial value

¹ Ranking 1-5: Finland, Switzerland, Israel, Japan, USA

chains. The chemical industry plays an important role for Germany as a centre of innovation:

Our industry researches, develops and manufactures new materials, substances and components that are required in numerous other areas of industry. In order to achieve this, our industry uses highly modern and efficient manufacturing processes. The digitalisation and networking of these processes with customers will continue to advance in the coming years. The keyword for this is Industry 4.0.

Therefore, the chemical industry plays a significant role in ensuring the quality of the German research location. New products and processes are best developed in close interplay between the value chains.

The innovation association of automotive engineering, mechanical engineering, electrical engineering and chemical engineering is the foundation of Germany's centre of innovation. This network supports itself through its excellent research and the exchange of knowledge and experience.

The industrial nation of Germany can rely on the innovation power of the chemical industry. We are a research-orientated industry. Over 70 percent of the approx. 2,000 companies manufacture and develop innovative products and services. This is a far greater share than in other branches of industry.

The domestic and European demand of industrial companies for chemical products remains unabated. The global chemical market continues to experience strong levels of growth. Those facts create an excellent foundation for the strong exports of the German chemical industry. However, the companies know: in particular, in order to benefit from the dynamic growth region of South-east Asia, innovation is the key for a successful future in Germany. Hence, the industry is increasingly focussing on the research-intensive segments of special chemicals and pharmaceutical products.

Therefore, companies are not cutting their R&D budgets: in the past year, companies invested far more than 10 billion euros in R&D. Since 2005, the R&D expenditures in chemical engineering have increased by an average of 2.7 percent per year. The industry segment uses 5 percent of its revenues to develop and launch new products and processes.

The chemical industry is one of three industrial sectors in Germany that have the highest R&D budgets. The chemical industry accounts for about one-fifth (17.5 percent) of the total industrial research expenditures.

Almost every 10th employee in our industry (that's about 45,000 men and women) now work on developing new products and processes.

Even internationally, the German chemical engineering sector is positioned well: following the US, China and Japan, Germany ranked fourth in a country comparison of research expenditures.

Dear Ladies and Gentlemen,

These key figures are good for purposes of comparison, but they do not tell the whole story. A lot more is at stake – for everyone.

The output of the chemical industry is essential in order to develop solutions for the challenges of a growing global society: sufficient food and medical care, clean water and climate-friendly mobility, or a safe and a low carbon-emission supply of energy.

Therefore, for us important research fields are power transmission and storage, catalysis processes, materials, pharmaceutical, agricultural, nano and biotechnology as well as efficient use of resources.

Here are a few examples: our researchers are working on new solid-state materials and high-temperature superconductors for an efficient power supply.

They are also working on developing a lightweight construction with modern fibre-reinforced composites in order to reduce the fuel consumption and lower carbon emissions. More powerful batteries and fuel cells are being developed for the electric car of the future.

Our researchers are also looking for antibiotics for multi-resistant germs: we are in desperate need of new substances that ward off life-threatening infections against which older medications have become ineffective.

Our researchers are developing herbicides with new effect mechanisms that enable a broader and more efficient application – for larger harvests and even lower environmental impact.

These examples show: the chemical industry plays a prominent role when we are dealing with the future of our planet. Therefore, our message is: sustainability needs more chemical engineering, not less. One realisation is now gaining more traction with politicians and stakeholders: those who want to move forward in a

sustainable, long-term fashion cannot afford to ignore innovation. The same applies to corporations: innovative companies must learn to integrate sustainability into their innovations.

Dear Ladies and Gentlemen,

Germany's good ranking as a region for innovation cannot make us lose sight of the fact that, in terms of innovation, the international competition is intensifying.

The R&D budgets in the US and China are increasing more drastically than they are here. Since the year 2000, the R&D expenditures in the US chemical engineering industry have tripled; in China they have increased tenfold.

In China, there is a clear government-based strategy to support innovation. In doing so, China is implementing standard tools: high levels of investment in the educational system; strong industrial expansion with significant investments in science and research – such as the active support of local innovations. For example, China does this by paying government premiums for patents.

And what about in **Europe**? There is a lack of innovation culture as well as little openness towards technological advancement. This can be seen in public discussions regarding new technologies. In Europe, it's a natural course of action that, in the assessment of a project, its risks are rated higher and discussed in more depth than its usefulness or potential benefits.

The political consideration of opportunities and risks must occur on the basis of a well-founded evaluation – otherwise no technical advancement is possible. We mean: in the segments of biotechnology, biocidal products or pesticides, Europe currently does not have this balance.

As an innovative sector of industry, in particular the chemical industry can only flourish in a regulatory environment that is based on the highest scientific quality. Therefore we are pleading to also establish an "innovation principle" in addition to the "precautionary principle" already in place. Specifically, that means: for new legal and regulatory initiatives, (the product) should not just be tested/assessed for its potential health- and environmental-related impacts, but also for its innovation.

What can we do better in **Germany**? In my opinion, there are four areas of action:

First: In Germany, the government provides some diverse research funding, for example through project-related funding. However, in order to remain relevant on an international level, the breeding ground for innovation in Germany must be more fertile. As a "fertilizer", we suggest implementing a tax incentive for the funding of research:

In two-thirds of the 34 OECD states and half of the EU countries, this instrument has proved to be an excellent and beneficial tool for both the government and the companies. So that the innovation power of the economy is further strengthened, the introduction of a tax incentive for the funding of research projects should no longer be delayed.

Second: In Germany, bureaucratic processes for entrepreneurs are much too time-consuming and difficult, and the opportunities for start-ups to receive financing too low. Even in Finland, Israel or Ireland, private stakeholders invest up to two to three times more venture capital. In Germany, we have to optimise our tax laws for investors and eliminate tax-related obstacles in order to attract more venture capital. For this reason, the federal government should quickly pass the venture capital law, as it had originally promised within the context of its coalition agreement.

Third: Innovation requires the best and brightest individuals. More money must be invested in education, in particular in the MINT education. The basis for innovation is set in school. Therefore, beginning in grade school more time and focus should be placed on mathematics and natural science-related courses. At the secondary schools, every third hour of class should be devoted to a MINT subject.

Fourth: Economic success requires openness towards new technologies. Therefore, we cannot allow ourselves to have any unquestioned reservation towards new technologies. In Germany we have unfortunately already experienced the repercussions by taking a similar stance on genetically altered plants. We are currently making the same mistakes when it comes to fracking.

The pattern is beginning to repeat itself: if we strictly limit the use of basic technologies – or even prohibit them altogether – then we will lose production as well as jobs in the medium term. In the end, the research base will leave the country.

The concern is shared by the German Federal Research Minister. She recently made it very clear: general propaganda that is intended to limit the freedom of research is dangerous and represents a risk to the business location of Germany. This is what we are both battling for.

Dear Ladies and Gentlemen,

Even if both Germany and the German chemical industry are stable and prosperous: neither can tolerate a period of latency. Prosperity and jobs are directly tied to the innovative capabilities of the industry and its value chains. More political backing for innovation is needed.

This is not an end in itself: in order to more clearly focus our society to sustainability, we must develop and produce as many innovative products as possible. The chemical industry – the best example of which is the ACHEMA – plays a major role.

Contact:

VCI Press Department

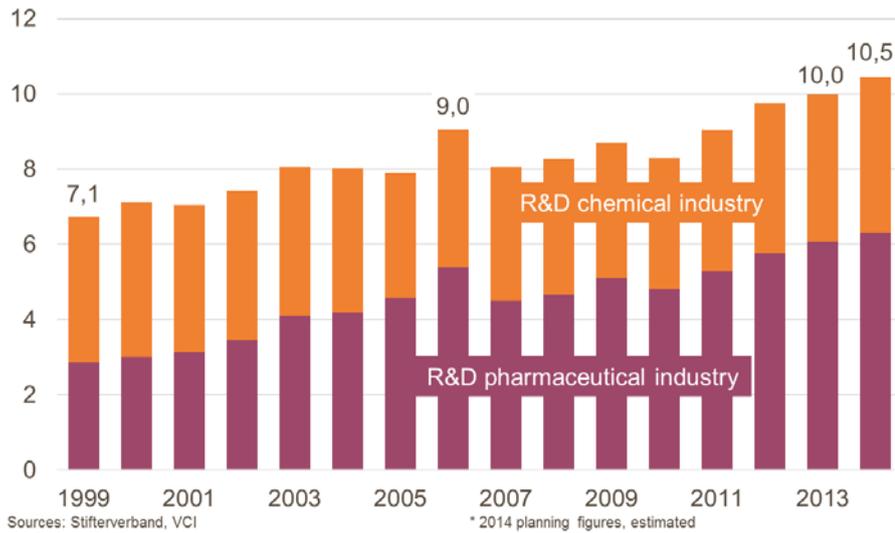
Phone: +49 069 2556-1496

E-Mail: presse@vci.de

Chemical industry in Germany increases its research and development spending

R&D spending of the chemical-pharmaceutical industry

in billion €

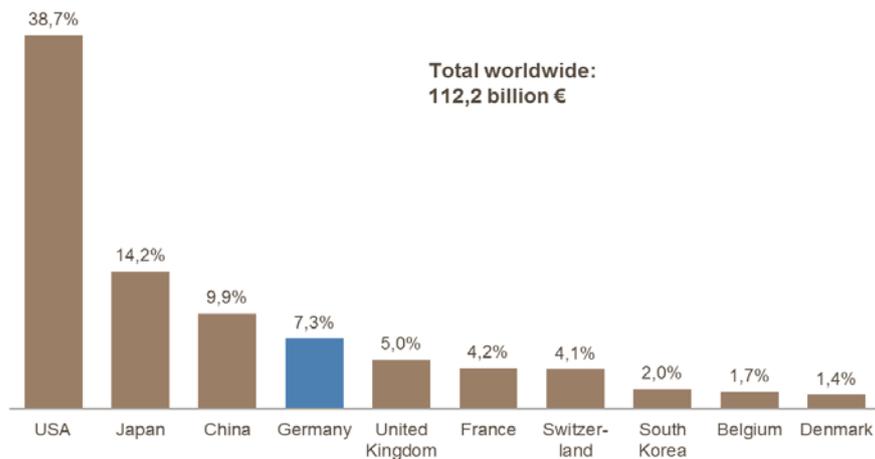


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Germany is the 4th largest innovation location globally of the chemical-pharmaceutical industry

Shares of countries in the global R&D spending* of the chemical industry, 2013



Sources: OECD, Eurostat, Chemdata International

* internal R&D spending

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