Statements by Mr Thomas Wessel,

Chairman of the VCI Committee for Research, Science and Education,

at a press conference in Frankfurt on 15 August 2019

(the spoken word takes precedence)

Ladies and Gentlemen,

Research and development (R&D) form the basis for the answers to the urgent questions of the future. To be more specific: how do we protect the climate? How do we ensure a growing world population doesn't suffer hunger or thirst? How do we respect our ecosystems' regeneration limits? But there are also other questions such as: How do we prevent plastic polluting the environment and how do we promote a circular economy? The chemical and pharmaceutical industry is working intensively on finding sustainable solutions for these topics.

Ladies and Gentlemen,

You are here today to find out more about the developments in the chemical industry and I warmly welcome you to this year's research press conference of the German chemical industry association – VCI.

From our key figures on research and the political framework conditions we can draw the following conclusions:

1. Germany remains one of the most important R&D locations for our industry.

2. Our R&D investments make a major contribution to products being manufactured here in the future which are successful worldwide.

3. Germany must not miss its future. We must promote new ideas, products and procedures much more strongly and also make it easier to set up new businesses. It is for this reason that we have compiled recommendations for a To Do list for the federal government.

Mainzer Landstraße 55
60329 Frankfurt

E-Mail: presse@vci.de
Internet: www.vci.de/presse

Telefon +49 69 2556 - 1496
Telefax +49 69 2556 - 1613

Research budgets for the industry continue to grow

In 2018 the German chemical and pharmaceutical companies increased their research expenditure to ca. 11.8 billion euros. In doing so, the industry has, once again, allocated more than 5 per cent of its turnover to questions concerning the future. The planned figures for the current year allow the following to be predicted: in 2019 the R&D budget will reach the 12 billion euros mark.

Graphic 1

R&D key figures

In no other industrial sector is the innovation orientation as great as in the German chemical and pharmaceutical industry. 60 per cent of our companies research continuously or occasionally particularly in the fields: energy transformation (Energiewende) and climate protection, circular economy and sustainability. Our industry plays a significant role in health research and in the development of new materials and active substances. Furthermore, many technical processes and business models are also being digitalised.

Graphic 2

Innovation orientation

We acknowledge that we research and develop in Germany and this is also reflected in the number of employees in our R&D laboratories which has increased to 43,000. This corresponds to an increase of a good 2 per cent compared to the previous year.

Our companies are, however, not only conducting research in-house: they also assign university institutes, other companies or start-ups. About a quarter of our R&D expenditure is, meanwhile, being allocated externally – and this with a rising tendency. With this, companies are increasing their flexibility whilst being able to focus on their key competencies at the same time without forgoing any of the scope of research. Contracts awarded to starts-ups, partnerships with science and the cooperation with companies abroad also enhance the knowledge and expertise within the businesses.

Germany is a strong location for chemical research

An international comparison shows that Germany remains the fourth biggest chemical and pharmaceutical location worldwide – after the USA, China and Japan.

Graphic 3

International research sites

Chemical products “made in Germany” continue to be in demand in the international markets: with an 8 per cent share of worldwide research-intensive chemical goods, we are, with third place, amongst the top three.

Ladies and Gentlemen,

Germany's strong position as a location for chemical research gives good reason for optimism but we must not overlook the fact that many industrial and emerging countries support the innovative strength of their businesses as a pre-requisite for growth and prosperity. China, in particular, has a considerable expenditure for research. In only 17 years, the People's Republic has managed to become the number two of the international research and development locations in the chemical industry after the USA. The Middle Kingdom is on a fast track and is absolute leader in scientific publications. In a worldwide comparison, the chemical and pharmaceutical publications from China account for 33.1 per cent whilst Germany, in contrast, only accounts for 6 per cent which corresponds to fourth place.

If we look at patents (2016): firstly, chemicals and pharmaceutical together. Here the Chinese competitors have, meanwhile, overtaken us and are in third position ahead of Germany. Germany only leads in the chemical patents alone. It is, however, only a matter of time until the Middle Kingdom overtakes us here, too.

Graphic 4

Patents

The Chinese research-intensive chemical products are internationally competitive and account for more than 10 per cent of the products worldwide (2017). With this, China has almost reached the same level as the USA and has overtaken Germany.

A To Do list for the federal government

Ladies and Gentlemen,

China's development alone shows that it is becoming increasingly difficult for our domestic research and production location to defend its good position in the mid-term. Hereby companies face a two-fold pressure to act. On the one hand, they need to assert themselves in the worldwide increasing competition and, on the other hand, they need to use their expertise to find answers for important social and ecological challenges. At the same time, they need to bring their research findings to the market quicker than previously.

What, therefore, needs to be done to ensure that Germany remains an attractive high-tech location? In the future the federal government plans to invest 3.5 per

cent of the gross domestic product in research and development. We welcome this! This target can, however, only be achieved if politicians create the suitable framework conditions to boost innovations. Two thirds of the overall total funding for research in Germany is, after all, raised by the companies.

And what should be included on a To Do list for the government? With the planned introduction of tax incentives for research for all companies at the beginning of next year, the government is finally setting the course for the necessary additional innovation impetus. Once the tax incentives for the promotion of research have been purposefully developed, they will lead to more jobs and greater value creation in the long-term.

“Contract research,” which I discussed earlier, requires a few improvements. What is decisive here is that the bodies awarding the contracts receive the tax incentives as they are the ones who carry the entrepreneurial risk of the research. We know that contract research is of considerable importance for small and mid-sized enterprises and the funding for the companies awarding the contracts is therefore important. This then also benefits the cooperation with scientific community which is very important to us.

There is also a further aspect to be considered: it is currently planned that the tax incentives for R&D will be a maximum of 500,000 (five-hundred thousand) euros per company per year. This can only be the start. Current plans encourage companies to invest more money in research and development only to a limited degree. There is still room for this to increase and the government should therefore continuously intensify the tax incentives for research over time.

Furthermore, a To Do list should also include a cross-departmental innovation policy which is coupled with the High-Tech Strategy 2025. This would help generate further progress for strengthening the location of Germany as a place for the high-tech industry – in the energy transformation (Energiewende) and electromobility. In the introduction of e-cars, for example, it will also be necessary to develop the charging infrastructure at the same time.

Experience shows that ambitious and important R&D projects often peter out because funding programmes are partly underfinanced. Between 2009 and 2016, the funding for industry from the Federal Ministry of Research, for example, decreased by 9 per cent. We therefore require well-financed funding programmes.

A To Do list for a good research policy also requires that existing and future regulations are assessed to see what their impact is on new products and

processes. We therefore promote an innovation check in legislation – in Germany and in Europe!

The judgement of the European Court of Justice (ECJ) of 2018 shows how it shouldn't be done: the ECJ ruled that CRISPR/Cas etc should be categorised as genetic engineering yet it did not take current scientific evaluations and findings into consideration. The result of this is that the use of the immense potential of gene editing for innovations in agriculture, medicine and the bioeconomy is considerably impeded. There is also the threat that countries outside Europe are the profiteers of these modern technologies. However, gene editing and other future molecular biological methods must be able to establish themselves in the long term in Germany to enable not only research but also production here. EU legislation which has been in place up until now, which is based on the scientific knowledge level of the 90s, therefore needs to be adapted in line with current scientific findings. And in the future, there should be regular assessments of whether it is still scientifically up-to-date and applicable in practice. This is a task which the new EU Commission should approach as soon as possible.

Molecular biological methods such as gene editing are applied in plant cultivation and animal breeding as well as in the manufacture of organic-based products in the bioeconomy and play an essential role in medicine and the health industry, in particular. The worldwide field of application of gene editing ranges from basic research and gaining information on gene functions and their interdependencies to the clarification and treatment of previously incurable illnesses such as multiple sclerosis as well as the targeted elimination of antibiotic-resistant germs, bio-based chemicals and more climate-resistant crops. So, as you can see, gene editing represents a whole wealth of opportunities that need to be exploited.

Making it easier for start-ups – overcoming the weak points

Ladies and Gentlemen,

Nothing ventured, nothing gained! This is true not only for politics but also for start-ups and start-ups in Germany therefore need to be supported more. They are important for the innovation performance of the chemical industry in several respects. Firstly, young companies, as agile and fast players in innovations, advance new ideas quicker and stimulate competition for the best solutions for customers and users of chemical products. Secondly, start-ups play a key role in the development of new application possibilities and new technologies. Demand

for these is, after all, often minimal to begin with and market entry is therefore not particularly appealing for established companies.

Graphic 5

EU venture capital market

The Scandinavians do it as well as the Brits and Belgians: they intensively support up-and-coming companies and allocate chemical companies more in the venture capital market than we do in Germany. In the German venture capital market, investments in young companies only play a small role. From 2015 and 2018 on average only 0.3 per cent per annum of all risk capital investments in Germany went to chemical start-ups. Well ahead were the IT sector (46 per cent) as well as the biotech and health industries (19 per cent).

We therefore need to urgently promote talented founders and inventors to strengthen the location of Germany as a place for high-tech industry. Innovative technology-based companies such as chemical start-ups do, however, have to overcome many hurdles in the beginning.

Current weak points are:

- **Too much bureaucracy:** Funding programmes are complicated, particularly when filing the applications. The transfer of property rights to founders is also partly difficult.
- **Insufficient growth capital:** In the early start-up phase, young companies, meanwhile, often have good capital cover due to good funding possibilities. Yet there is still often a lack of capital in the key growth phase. Chemical start-ups need time for technological development and therefore require considerable capital for example for development costs, patent registrations and the building of production facilities.
- **Insufficient infrastructure:** Chemical start-ups require a professional infrastructure which includes, for example, laboratory facilities or pilot plants. A garage isn’t enough! Instead, they need incubators and accelerators.
- **Lack of a start-up mentality:** It appears as though the setting up of an own business is not particularly appealing for most chemistry graduates.

High time, therefore, to offer more help for chemical start-ups:

- A noticeable reduction in bureaucracy and simplification of funding programmes is required, for example, for faster applications and credit checks which are customised for start-ups.

- The VCI welcomes the government's measures for the provision of state initiated or shared venture capital funds for example the Tech Growth Fund orientated to the growth of start-ups. However, these funds should not only be orientated to digital fields and should also cover the needs of young innovative companies which develop materials and active substances and have considerable capital requirements due to long development times. Highly promising ideas shouldn't fail due to a lack of money for the growth phase.

- A good example of a chemical incubator is the Chemical Invention Factory which is being established on the campus of the TU Berlin university. The state of Berlin and the TU Berlin are investing 11 million euros in the building of a start-up centre for "Green chemicals". An example which should be followed!

- To strengthen entrepreneurial spirit, universities should establish and develop seminars, courses and readings on entrepreneurship.

As an industry we have also made a contribution: with the "Forum Startup Chemie" we, together with partners from start-ups, science and the venture capital field, support innovative companies on their journey to market maturity. Two-hundred and eighty chemical start-ups of the 300 chemical start-ups in Germany can, meanwhile, be found on this platform.

Ladies and Gentlemen,

Industry alone cannot keep Germany at the top – this also requires political support. We therefore call upon the federal government to urgently make Germany more appealing as a location for the high-tech industry and put our recommendations for the To Do list into practice. Germany and its society will, otherwise, not be able to keep up in the future. We are prepared to make our contribution to ensure that Germany doesn't miss the boat.

Contact: VCI press, telephone: 069 2556-1496, e-mail: presse@vci.de