Report on the First German National Follow-up Conference on the High Level Group on the Competitiveness of the Chemical Industry in Europe

Berlin, 1st July 2010

1. Introduction

With the decision of 14 February 2007 the European Commission – in the framework of its dialogue on industrial policy – set up the "High Level Group on the Competitiveness of the Chemical Industry in Europe"[1]. This group had as its task to conduct a thorough economic and statistical analysis of the factors and formulate sector-specific recommendations as to what the European Community, the member states and the chemical industry could implement in order to enhance the competitiveness of the European chemical industry and align it to the principles of sustainable development. After 17 months of work, the High Level Group (HLG) delivered a Final Report[2] comprising 39 recommendations directed at the chemical industry, the European institutions, the EU member states and the regions.

Germany is the European country with the biggest industrial and chemical sector. Hence, the recommendations of the HLG have a special importance for country.

The connection between the discussions in the HLG with the actual implementation of its recommendations is a decisive factor for the success of the whole strategy behind it. The German Chemical Industry Association (Verband der Chemischen Industrie VCI) and seven German member regions of the European Chemical Regions Network (ECRN) – Bavaria, Lower Saxony, Saxony-Anhalt, Schleswig Holstein, Rhineland-Palatinate, Hesse and North Rhine-Westphalia – therefore organized the First National Follow-up Conference on the implementation of the HLG recommendation in Germany. It took place on 1st July 2010 at the representation of North Rhine-Westphalia in Berlin.

About 90 representatives of chemical companies, industry associations, federal and Länder ministries, German MPs, as well as representatives of other European chemical regions and of the European Commission attended the conference.

The aims of the conference were

- To exchange experiences and strategies of the German Länder, the chemical industry and the federal government on the implementation of the HLG recommendation
- To describe and analyse the need for further action

[1] Commission decision of 14 June 2007: Setting up the High Level Group on the Competitiveness of the Chemicals Industry in the European Union (2007/418/EC)

[2] http://ec.europa.eu/enterprise/sectors/chemicals/files/final_report/hlg_final_report_july09.pdf

- To recommend following steps in the implementation

The areas of innovation, education and human resources, energy and feedstock as well as infrastructure and logistics had been selected by the regional branches of the VCI and the German ECRN members and detailed descriptions had been compiled on already implemented or planned measures to implement important HLG recommendations. The selection that has been presented at the conference is attached to this report.

The following sections comprise a summary of the conference and its most important results.

2. Opening Session

At the opening session of the conference **State Secretary Dr. Jens Baganz of the Ministry of Economic Affairs, SMEs and Energy of North Rhine-Westphalia** pointed to the importance of the chemical industry for Germany, and especially North Rhine-Westphalia. In his speech he made clear that increasing the competitiveness through the support for cluster initiatives is an important policy instrument in his region.

Gwenole Cozigou, Director at the European Commission's Directorate General for Industry, referred in his speech to the necessity of implementing the HLG recommendations on all levels. Because the European Union has no competences in most of the areas concerned, the European Commission depends on the implementation to take place 'on the ground'. He announced that the Commission will work on a report on the implementation of the HLG recommendations. In September there will be further deliberations with the actors concerned. The Director thanked the ECRN for its contribution to the HLG and for the organization of the follow-up conference together with the VCI.

In his words of welcome **the Parliamentary State Secretary of the German Federal Ministry of Economic Affairs and Technology, Hans-Joachim Otto**, addressed the significance of the industry for the German economy. A quarter of the total revenues of the European chemical industry is being made Germany. For the chemical industry – the "industry of industries" – it is crucial to set the right conditions for the framework in which it operates. In this context, the Parliamentary State Secretary argued for open markets and a strategic policy on energy and raw materials. He called for a fair design for emissions trading and greater acceptance of natural sciences as subjects in school and at universities. He was optimistic that the conference would provide important impulses for future policies on securing German and European competitiveness.

In his contribution, **the President of the ECRN and Minister of Economic Affairs of Saxony-Anhalt, Dr. Reiner Haseloff,** argued that the chemical industry is not part of the problem but part of the solution to future challenges to our society. It is important to preserve the industrial base of Europe and - if possible – strengthen it. If industrial production was strengthened in Europe and would operate under stricter environmental standards than elsewhere, this would also mean a great contribution to climate protection. He favoured an energy and raw materials policy oriented on the long term and in this context stressed the future potential of the utilization of coal. Furthermore, he referred to Eastern Europe where the chemical industry still has great potential for development. In this context, the ECRN constitutes a motor for interregional cooperation, for example with regard to

chemical logistics and the support for innovation at chemical sites. The ECRN President was optimistic that the REACH system would develop into the trade mark of safe chemical products worldwide.

In the last speech of the opening session **Dr. Utz Tillmann, the General Manager of the VCI**, talked about the important role of the cooperation between chemical companies and the chemical regions. He appreciated the work of the ECRN and pointed to the good cooperation between ECRN and VCI. He described the many future challenges to the chemical industry, referring to the VCI paper on the principles of a sustainable industrial policy. Concerning the HLG follow-up process, he pointed to the responsibility of all levels and actors involved in order to secure the competitiveness of the chemical industry in Germany and Europe. He also called for more education in the natural sciences and openness to innovation.

3. Reports from the panel sessions

After the opening session the participant split up to join one of the panel sessions on innovation, education and human resources, energy and feedstock, and infrastructure and logistics. During these sessions the following overall questions were discussed:

- What has been the contribution of the measures enacted so far by the chemical industry, the Länder and federal ministries to implement the HLG recommendations?
- What are the possibilities for an exchange of experiences and instruments between the Länder to speed up the implementation processes?
- What actions need to be taken in the coming years on the regional, national and European level?

3.1 Report on the Panel Session on Innovation

This panel session was chaired by **Dirk Meyer**, Head of the Department on Chemistry at the Ministry for Economic Affairs, SMEs and Energy of North Rhine-Westphalia. The following projects were presented during the session:

- 'Initiative Hessen-Nanotech' and 'Information Platform Nano-Safety'
  Sebastian Hummel, Hessian Ministry for Economic Affairs, Transport and Regional Development
- Cluster Competition Industrial Biotechnology of the German Federal Minitry for Education and Research (Bioindustrie 2021)
  Hans-Jürgen Mittelstaedt, General Manager, VCI North Rhine Westphalia
- Initiative of excellence of the Metropolregion Rhein Neckar: InnovationsLAB
  Bernhard Schweizer, InnovationsLAB GmBH
- Health Sector Initiative – Life Sciences Lower Saxony
  Ansgar Rudolph, Head of the Initiative
- Europe-Innova Project „IMP3rove"
  Dr. Peter Haider und **Daniel Gottschald**, General Nanagers Chemical Cluster Bavaria

Hans-Jürgen Mittelstaedt, General Manager of VCI North Rhine Westphalia was the rapporteur of this panel session.

The participants of the panel session see the European technology platform in the chemical field, "Sustainable Chemistry" (SusChem) and the national platform SusChem Germany as important elements in order to thematically concentrate and align topics and initiatives worth funding. It needs to be stressed that SusChem is lead by the chemical industry and aligns its topics along the value chain. In the future, its topics shall be oriented increasing on big societal needs and challenges, as they will be the main market drivers.

In this context the participants point to the fact that this approach can also contribute to an increased acceptance of the chemical industry in society. It still needs to be discussed how a bridge can be built between the rather abstract needs and concrete questions and problems while paying special attention to the SMEs in the value chain. An important field in this regard are chemical topics with an orientation towards the material sciences. Here the 'WING 10 points strategy' of the federal Ministry for Education and Research can be used and extended.

In order to arrive at a better linking of regional value chains relevant to the field of chemistry as stated in the HLG recommendation, the participants suggest that more events and meetings to exchange best practice should be organized. This way the experiences of many different initiatives for funding and support which take account of regional characteristics and address highly relevant topics and technology can be shared. An increased regional and national exchange presents a good possibility for including SMEs of the chemical sector. On the basis of experiences of the participants, they call for the creation and support to interregional clusters located in two or more Länder.

The introduction of new measures for support, like a funding competition on chemical energy research in the framework if SusChem Germany is seen as suitable to exchange national and regional activities. Furthermore, the introduction of open calls for funding is suggested for the chemical field, in order to be able to stimulate new technologies.

Recommendations to the political level:

With the aim of increasing the connection to international research, the German national topics for research should be in line with those of the EU funds. The possibility of opening the Public Private Partnership Projects meant to be funded under the 8th Framework Programme to national funding. The efforts for arriving at an increased participation of the chemical industry, especially SMEs, in EU-funded research projects should be kept up. The lifting of the SME-threshold to 1000 employees is seen as an important framework condition for reaching this goal.

As the discussion has shown, further simplification of national funding processes is also of importance. It has especially been call for the necessity of harmonizing the funding processes of the regional, national and European level.

3.2 Report on the Panel Session on Education and Human Resources

This panel session was chaired by **Dr. Andrea Niedzela-Schmutte**, Head of Unit in the Bavarian State Ministry of Economic Affairs, Infrastructure, Transport and Technology. The following projects have been presented:

- Chemistry Days for Pupils at Bavarian Universities
  Dr. Hermann Fußstetter, Wacker Chemie AG
- Study Programme "Chemistry and Economics"
  Prof. Dr. Martin Beyer, Christian-Albrecht-University of Kiel
- Training for Teachers in order to get a License for teaching Chemistry and Physics
  Frauke Mosbach, Institute for Teacher Training
  Dr. Christine von Landenberg, VCI Rhineland-Palatinate
- "Future through Innovation"–centres
  Ralph Angermund, Head of Unit for Research and Education, Ministry of Innovation, Science and Research of North Rhine-Westphalia
- Skills Initiative of Lower Saxony
  Ralf Borchers, Ministry for Economic Affairs, Labour and Transport of Lower Saxony

The rapporteur of the panel session was **Dr. Hans Jürgen Klockner**, Head of Science and Research at VCI.

The participants of the panel session concluded that well-educated scientists, engineers and skilled professionals are crucial for the competitiveness of Germany as an industrial location.

Every tenth employee of the 416,000 ones employed by about 2,000 chemical companies in Germany works in the field of research and development. Therefore, good education in the sciences and math of the population is an important location factor.

The participants took stock of the HLG recommendations 14 to 16 on the area of education and human resources and made suggestions as to their implementation and advancement.

Most of the projects presented in the session addressed recommendation no. 14[3] on chemistry education at schools. The presented activities ranged from projects for children of kindergarten age to project for youths in the last years of their secondary education.

Recommendations to the political level:

As to the further implementation of recommendation no. 14 and its advancement it can be noted:

- With regard to its technology-oriented structure Germany needs high educational standards of its population concerning the "MINT subject" (mathematics, informatics, natural sciences comprising physics, chemistry and biology, as well as technology). This has to be reflected in the curricula of the MINT subjects. Lessons in the MINT subjects should begin at an early stage and has to continue without breaks until graduation

[3] "Member States should step up promotion of chemical and science education, starting with primary schools."

- Approaching chemical topic should begin already at kindergarten age and be continued until graduation from secondary education. This is not only important for raising young peoples' interest in chemistry but also to enhance the understanding and comprehension of chemical topics and questions in society as a whole.
- The International Year of Chemistry of the UNESCO in 2011 should be used to convey that chemistry and the chemical industry contributes to the solutions of global problems, such as climate protection and clean water
- Experiments in class are especially important, because it is the best possibility to experience the fascination of chemistry and to gain knowledge on chemical processes
- Special attention has to be devoted to the education and training of the teachers. Experiments and their set up should also be the focus here. E-learning possibilities should be enhanced for teacher training.
- Measures that have proven to be successful are partnerships of companies with single schools, the invitation of classes to visit a company and the cooperation of chemical associations with teacher organizations and Ministries for Education. These kinds of partnerships should be extended because the participation of the industry in chemistry education is important for enhancing the practical relevance of the contents of education. The Fund of the Chemical Industry is doing a good job in this regard.

As to the further implementation of recommendation no. 15[4] and its advancement it can be noted:

- The Bologna Process with the introduction of the modular Bachelor and Master system opens diverse possibilities for new educational profile. Examples are the studies "Chemistry and Economics" are the Master Programme "Toxicology" in addition to a Bachelor Programme in Chemistry. These new possibilities should be used extensively by the higher education institutions.

As to the further implementation of recommendation no. 16[5] and its advancement it can be noted:

- It would be helpful if companies of the chemical sector or the chemical industry association could specify on the skills, professions and demand for skilled labour to a greater extent than at this moment. This would help the educational institutions to adapt their capacities and curricula to the market demand. This information is also helpful for pupils and students in making their decision for educational and study programmes.
- Vocational education and the "dual system" are a strength of the German educational system. The dual system is still of great importance to the chemical sector. A cooperation of the social partners with the Federal Institute for Vocational Education (BIBB) and the Federal Ministry for Economic Affairs has updated the curricula and rules governing vocational education in professions relevant to the chemical sector. The next step should be a orientation towards competences, which is especially important for SMEs.

[4] "Chemistry and/or chemical engineering faculties should define the profiles of new professions in cooperation with industry."

[5] "Industry, in cooperation with education and employment agencies, should intensify efforts to assess its human resource requirements in the short and long term in various locations and regions and identify probable changes in skill profiles."

3.3 Report from the Panel Session on Energy and Feedstock

This session was chaired by Jens Wrede of the Economic Development Association of Brunsbüttel. The following projects were presented:

- Seperation of carbon dioxide in coal-fired power plants
  Dr. Rüdiger Schneider, Siemens AG Energy Sector Fossil Power Generation Division
- Innovative process technologies involving lignite in Saxony-Anhalt
  Andreas Dockhorn, CeChemNet
- Renewable Resources, Schleswig Holstein
  Dr. Frank Bohnen, Vesta Biofuels Brunsbüttel GmbH & Co., plant manager
- Nordstream
  Jens Müller, Nord Stream AG
- Alliance for Industry and Sustainability, North Rhine-Westphalia
  Uwe Wäckers, VCI North Rhine-Westphalia

Rapporteur for the final session was **Dr. Jörg Rothermel**, Head Energy and Climate, VCI.

As a result of the panel session it has been stated that energy and the provision of feedstock are among the main location factors for the chemical industry in Europe and Germany. The German chemical industry is the biggest industrial user of electricity as well as gas. The HLG recommendations aim at securing safe and climate-friendly provision of energy and feedstock for the chemical industry, at prices that do not have negative impacts on its competitiveness. First projects have been implemented in this regard.

Electricity Supply

The chemical industry is the industrial sector with the highest demand for electricity. A secure provision of electricity can only be guaranteed by broad electricity mix of all sources and technologies, especially including the conversion of coal to electricity. Projects are running in this field, making the use of coal possible also under the present rules on climate protection, but with comparably high emissions. The capture and storage of carbon (CCS) presents a promising technology in this context and is currently being further developed. CCS will make the long-term use of coal possible for energy generation, without carbon dioxide emissions. If this technology can be made cost-effective, a basis for continuing electricity generation from coal will be created.

Furthermore, however, the framework on the national and European level needs to be designed in a way that does overcompensate possible cost advantages of electricity generation from coal by a lack of competition on the electricity market and additional costs induced by the governments.

Recommendations in the area of Electricity Supply

On the basis of the above analysis the following recommendations for action have been discussed in the panel session:

- European level
    - Implementation of a competitive single European market for electricity

        - Upgrading the cross-border interconnections of the grid for an increased cross-border trade of electricity

- National level
    - Creating a framework and building up acceptance for CCS
    - Strengthen the supply side by improved framework conditions for new suppliers
    - Supporting long-term energy supply contracts with fair prices
    - Limiting current burdens resulting from energy taxation and the Renewable Energy Regulation
    - Introduction of a system for compensation for electricity costs caused by emissions trading

Gas Supply

The chemical industry is the industrial sector with the highest demand for gas. Gas is used not only for reasons of energy supply (70%) but also as a raw material in chemical production (30%). A secure and low priced gas supply is therefore vital for the chemical industry.

With the aim of securing the supply of gas to Europe, the “Nord Stream” pipeline between the EU and Russia is being built. It will be able to cover about 25% of the gas imports of the EU until 2030. As with electricity, a framework for gas has to be worked out which increases the competition on the gas market and guarantees a well-priced supply of the consumers. This is mainly a task for the national level:

Recommendations in the area of Gas Supply

- National level
    - Reduction of the market areas for gas in Germany, as for the electricity market
    - Expand the transparency rules for balancing energy on the gas market
    - User-based allocation of the costs for balancing energy on the gas market
    - Creation of a framework for reporting procedures for gas use and supply, in order to grant industrial large-scale consumers access to the gas market

Feedstock Supply

The feedstock supply of the European chemical industry is currently based primarily on naphtha. In the long-term a secure and cheap feedstock supply a diversification of the feedstock base will be necessary. Next to an increased use of natural gas, the use of black coal, lignite and especially biomass is possible.

Concerning the use of coal Germany can resort to an experience of many decades. A pilot project at a site in Leuna (Saxony-Anhalt) which aims at supplying the whole site with synthetic gas in the medium-term is the first one of its kind in Germany. For the actual implementation of this technology on a large scale further intense research and development is necessary, but also a framework that keeps down the costs of the inevitable emissions of carbon dioxide. This is a taks for the European and the national level.

An additional alternative and promising possibility for securing the provision of feedstock is the use of biomass and renewable resources gained from it. The HLG already stated its limited possibilities at present. In order to make better use of renewable resources intensive work in the area research and development is needed to first of all develop the adequate technologies for the provision and processing of the resources. The regeneration and further processing of biomass in bio refineries will have a special role in this regard. Also concerning this aspect first concrete pilots have started, e.g. in Leuna. However, more support for these technologies is needed from the European and national level. Adding to this, sustainability criteria have to be set up for the material use analogue to the use as a fuel where a regulatory framework already exists.

In general, the supply of renewable resources (like bioethanol for material use) should be possible at globally competitive prices. There are already exceptions to the high EU import tariffs for renewable resources for material use. The EU should review its current regime of import tariffs with the aim of providing the chemical industry with feedstock at better and forward-looking conditions.

Recommendations in the area of Feedstock Supply

- European Level
    - Designing the rules for allocation in the emissions trading scheme in a sufficient and efficient way (developing a benchmark-value for the production of synthetic gas from coal)
    - Intensifying support for research and development
    - Support of concrete bio refinery pilot projects on the European level
    - Designing import tariffs of renewable resources in a way that ensures supply at globally competitive prices

- National Level
    - Support of research and development for the use of coal
    - Creation of a framework for the long-term use of CCS
    - Intensify national support for research and development activities
    - Support of concrete bio refinery pilot projects on the national level
    - The Federal Government and the Länder should advocate EU import conditions for renewable resources for material use at globally competitive prices

3.4 Report from the Panel Session on Logistics

This panel session was chaired by **Catrin Gutowsky**, Head of Unit in the Ministry for Economic Affairs and Labour of Saxony-Anhalt. The following projects were presented during the session:

- Logistics RheinMain. The knowledge initiative.
  Manuela Wehrle, member of management of “Founding Initiative Frankfurt HOLM e.V.”
- ChemLog Initiative, Saxony-Anhalt
  Wolfgang Schnabel, Supply Chain Manager of Dow Olefinverbund GmbH
- Logistics Initiative Lower Saxony
  Michael Krohn, Logistics Initiative Lower Saxony

Rapporteur of the session was **Dr. Matthias Hanisch**, VCI North-East.

The discussion resulted in the recommendation of the following needs for action:

Regional and national level

- Parts of logistical infrastructure (such as pipelines and terminals) need a better image and greater acceptance by the population. Campaigning for this is a permanent task for everyone in the logistics sector. A better image also supports the supply of skilled professionals. The education and qualification of logistics specialists is an important condition for offering logistical services of a high quality.
  Regional initiatives in the field of logistics already make valuable contributions to the solution of these problems and will enhance their efforts to do so. Examples are the 'logistics days' and the House of Logistics and Mobility in Frankfurt/Main. Regional logistics initiatives are open to the chemical industry and their activities are of us to chemical companies.

- Logistics initiatives often have their origins in regional activities with the aim of locational marketing. In the meantime, interregional and national networking begins to take place in the 'Working Group Logistics Initiatives Germany'. From the perspective of the industry, this cooperation should be extended to arrive at processes of work-sharing.

- As far as the development of infrastructure is concerned, the chemical industry is especially interested in the removal of local bottlenecks along important trans-European routes. Every delay of the necessary investments affects the competitiveness of the industry.

- The chemical industry advocates the use of environmentally friendly modes of transports, especially rail transport. Through improvements of the infrastructure, a demand-oriented network of terminals for intermodal traffic, and higher reliability and quality of service of the railway providers the shift to rail transport can be supported. The chemical industry does not favour a shift to rail transport by regulatory means, like making road transport more expensive. Today's railway systems would not be able carry a great deal of goods transported on the roads.

European Level

- The markets for the chemical industry change. On the on hand, Eastern European and Asian markets gain greater importance, but on the other hand potential competitors emerge in the Middle East. These changes have to be reflected in the development of infrastructures. Next to the traditional North-South connections East-West connections will play an increasing role.
  The planning of the Trans-European Networks has to take note of these changes with regard to a pan-European approach. The chemical industry also calls for more accountability and a binding character of the planning process as well as a better coordination between the EU member states.

- In the framework of the programme “Responsible Care” the chemical industry attributes a high importance to the safe transport of chemicals. It advocates the implementation of common quality standards in Europe and rates its service providers according to the Rating Safety and Quality Assessment System (SQAS). Also service providers outside the EU are increasingly forced to fit these standards. Joint ventures between Western and Eastern European companies, for example joint container terminals, can contribute much to the implementation of EU quality standards. With the conclusion of treaties on securing investments in Eastern European countries can support the set up of these joint ventures.

- Chemical companies attach importance to sustainable transport using a minimum of resources. Plans of the European Commission on greening transport should be implemented in a way that no market distortion at the expenses of European chemical and logistics companies occur. All measures need to be preceded by a careful impact assessment.

- The chemical sites in Central and Eastern Europe are “dry sites”, meaning that they do not have direct access to transportation by ocean-going vessels. This disadvantage should be set off by an extensive network of pipelines. Supporting the building of pipelines and issuing permissions in a non-bureaucratic way will help the building of such a network. This applies also to the supply of pipelines in Western Europe.

- The lack of uniformity of many technical and social rules, norms and standards in Europe blocks the introduction of competitive and efficient logistical processes. A harmonization of these rules and an increase in the interoperability in railway transportation are important conditions for strengthening the competitiveness of the chemical industry.

4. Final Session of the Conference

After the reports from the different panel sessions, Professor Reinhard Quick of the VCI office in Brussels made clear that a sustainable industrial policy needs to be originated and implemented at three different levels – the Länder, the federal level and the EU. He illustrated this with regard to some central policy fields:

Approaches and Actions at Länder Level

- Extension of research infrastructures and strengthening of clusters
- Good logistical connections of the most successful chemical parks in Germany
- Extension of education in the MINT subjects, but also general economic and business topics, and a better integration of migrants, also through at very early age
- Local and public dialogue, in order to facilitate infrastructure projects and establish a more effective processes of administrative decisions and permissions

Approaches and Actions at Federal Level

- Introduction of fiscal funding for research

- Preservation of tax adjustment on energy for energy-intensive industries
- Continuing and accelerating the cutting of red tape
- Broad dialogue to increase acceptance for new technologies

Approaches and Actions at EU Level

- A climate policy based on competitiveness
- A coherent policy for materials and substances, e.g. implemented in the framework of a revision of REACH
- A quick, ambitious conclusion of the WTO round and a trade policy that will secure the access to raw materials and feedstock at globally competitive prices
- Progress at the introduction of a harmonized system of European patent regulations

In his contribution, the **head of the Representation of Saxony-Anhalt to the European Union, Thomas Wobben**, pointed to the fact that the follow-up conference has made clear the great interest in and demand for exchanging experiences on measures to implement the HLG recommendations.

Referring to the current discussions on the flagship initiative on industrial policy that forms part of the Europe 2020 strategy, he suggested that the chemical industry and the chemical regions should commit themselves to continuing the sectoral dialogue. He announced that following the conference the Länder would present a report and resolution on the most important results at the meeting of the Ministers for Economic Affairs of all German Länder in December 2010. Saxony-Anhalt and North Rhine-Westphalia will draft the report. In this context it will also be decided whether the a follow-up conference will be regularly organized by the chemical industry and the chemical regions of Germany.

Thomas Wobben also drew attention to the activities of the ECRN which will on 7 October hold a European follow-up conference to the HLG recommendations on the occasion of its yearly congress, with the support of the Belgian Presidency of the Council of the European Union.

As the final speaker of the conference, **Bert Kersten, the Regional Minister for Environment, Energy and Sustainability of the Dutch Province Limburg**, addressed the European perspective. He made clear the importance of a close cooperation of economy, research and politics in order to master future challenges. He was optimistic that the further development of renewable energy will include new potential for growth of the chemical industry.