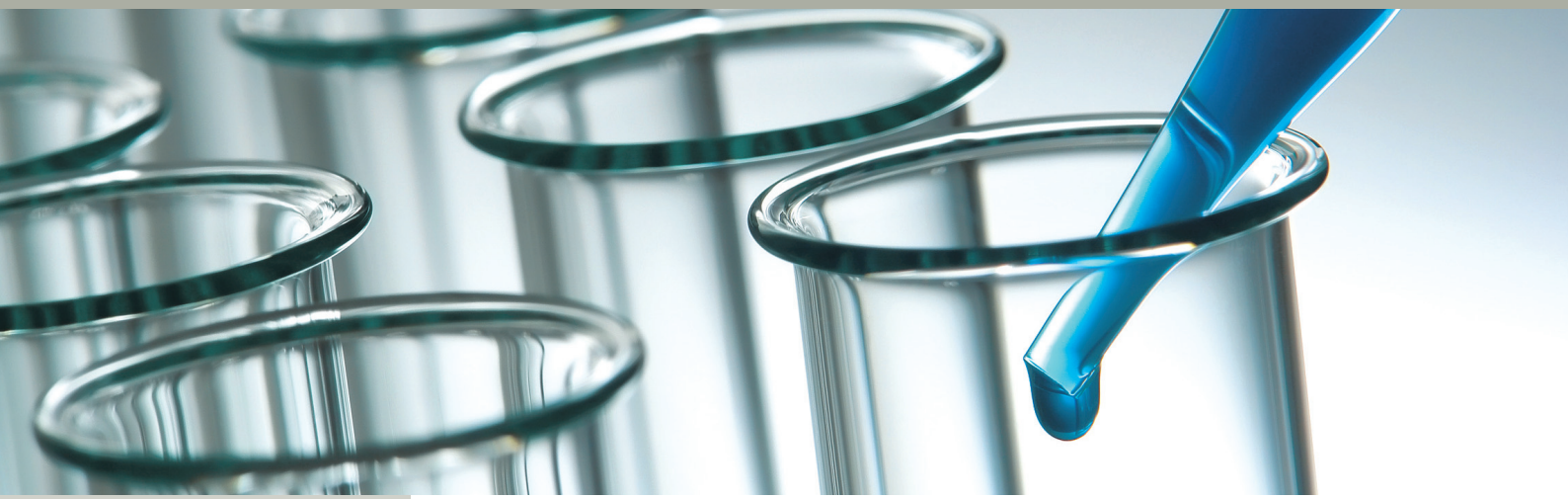
ChemClust
OCTOBER 2012

NEWS LETTER



INTERREG IVC
INNOVATION & ENVIRONMENT
REGIONS OF EUROPE SHARING SOLUTIONS

European Union
European Regional Development Fund

INSIDE THIS ISSUE

PREFACE

The ChemClust project is coming to end and so it's time collecting results and outcomes. After two years of fruitful cooperation, we can state that all the goals set at the beginning of the project have been successfully achieved. Important outcomes as Policy recommendations are now ready to be disseminated and share both at local and EU level, in order to stimulate a prolific debate among main stakeholders in view of the next Structural Funds programming period (2014-2020).

The efforts of project's partners, together with the involvement of qualified experts, have led to the identification of the best practices applied in each Region, considering different aspects of the industrial development and the policy making process related to chemicals. All these practices are now available in the new ChemClust Best Practice Guide, where, beyond a methodological presentation of the best experiences identified, it will be possible to consult a list of all the lessons learnt, the transferability and the good results achieved in each region.

In the mean time, the Benchmark report has been updated with fresh and recent data, in order to follow the development of each partner Region. It is very useful to understand better how the chemical industry is facing the crisis and which Regions are growing though and which are proceeding more slowly; the report is meant also to analyse the reasons and the causes of this gap, in order to bring out the best solutions applied in Europe.

The concept of chemical clusters has been deepened, gathering ten different examples of industrial development from seven EU countries and comparing clusters' organization from three different points of view, following the three pilot projects carried out as follow:

Open Innovation: the goal of "Open Innovation" is to foster and spread the so called open innovation system among cluster's stakeholders. The group is composed by partners from Limburg, Schleswig Holstein, Novara and Asturias.

Skills Foresight: Cheshire and Chester Council, Tees Valley, Mazovia and Novara worked together in this pilot action. It aims to enhance the human resources available, create interest in the chemical industry and close the skills gap between schools, universities and enterprises' needs.

Chemical Parks as Knowledge sites: partners from Saxony-Anhalt, Usti Region and North Rhine Westphalia learnt about the activities of chemical parks in Saxony-Anhalt to promote innovation on their sites, as the pilot action's target is to improve the innovation capacity of chemical enterprises by exploiting and developing the specific capabilities of chemical parks.

On 20th September 2012 ChemClust partners have met in Gijon (Asturias) to discuss the results obtained through the project and plan the next and final actions. After finalization of documents as policy recommendations and Benchmark report, both meant to be shared on EU level, the partners have agreed on meeting together in Brussels the next November for the last conference: this will be an important moment of confrontation and discussion with political representatives from the Region involved.

BEST PRACTICE GUIDE NOW PUBLISHED

The ChemClust Project has presented its brand new Best Practice Guide, collecting the best solutions, innovative processes and industrial policies applied in each partner Region. The aim of this guide is to share among project partners and interested EU institutions all these practices, in order to help European chemical industry to find proper solutions to solve structural weaknesses of the sector.

In a period characterized by economic uncertainty, where the whole European chemical sector is facing strong competition from new and dynamic realities, China and Asia above all, join strengths and share innovative potential seems to be the best solution to get back on the path of economic growth. For these reasons, this guide could be a new and useful tool to stimulate European cooperation and, in the mean time, go towards Europe 2020 targets.

The Guide extracts the main lessons learnt from the best practices proposed by partners and, in order to collect all the material in a methodical way, for example by the policy objectives tackled and the industrial strategy applied, six key action lines have been identified.

By each action line, several recommendations and readings have emerged. Here below a brief list of the results achieved:

- **Connect industry and society:**
  European economy has increasingly become a service economy, and for some time industry was not sexy. However, public authorities and public opinion strongly react when an industry closes down. The preservation of the industrial base is one of the main priorities for most of the regional authorities. Building stronger links between industry and local communities is one strategy.

- **Promote business co-operationand public-private partnerships:**
  Business co-operation is one of the major challenges of industrial policy, often pretended, seldom achieved. ChemClust good practices show that co-operation is attainable, and pays back: innovation, access to international markets, networking, Eu legislation. Company led co-operation seems to work much better (concrete goals), although the public support (public-private partnerships) helps to develop and consolidate.

- **Increase R&D potential:**
  Chemical companies need to be in front of technology development to remain competitive against low cost countries. A continuous flow of investments to update the supporting research and development infrastructure is needed. A good mix: strong public support and real private involvement.

- **Foster innovation and business creation:**
  Infrastructure and other fixed assets provide the basic support to innovation. However, innovation increasingly depends on attracting knowledge and talent. The road to innovation has to be travelled, with different cars, different drivers and, sometimes, with little or no gas, but the most important is to know the road or got a good map.

- **Improving competitiveness:**
  Improve product and market access, reduce costs, these are the final goals of most of the reported good practices. Innovation is probably the main driver of competitiveness in chemical industry. Other factors, however, may also seriously affect competitiveness: human resources, environmental risks, economic crisis

- **Retain industrial base and investment attraction:**
  The ghost of delocalisation is haunting industrial regions in Europe. There is very little to do at micro-level to fight against lower production costs, growing markets and sometimes, unfortunately, lower social or environmental standards. Seek other type of incentives, in line with the needs and priorities of the companies: the knowledge sites.

The best practice guide is now available on ChemClust website at the following link: **www.chemclust.eu**

NOVARA: WHERE TRADITION MEETS INNOVATION

The chemical industry is still a leading sector of the Italian economy and one of the most innovative industrial branches, representing approximately the 10% of the whole European chemical production. Novara has been for decades one of the most important chemical cities on the national territories as home of some of the biggest italian companies. Today Novara can still rely on seveal and innovative companies that, in 2009, have joined their strenghts with the creation of IBIS (Innovative BIo-based and Sustainable products and processes). The Pole is based in Novara and today represents 27 chemical companies, most of them of small/ medium size with high innovative potential. The Province of Novara has hence decided to promote this Pole both at local and EU level, by supporting its administrative path and by promoting its activities through projects as ChemClust. IBIS each year presents several research projects born through the coopeation and the sharing of knowledge of its members, joining strenghts and efforts in order to achieve modern and competitive products on different chemical fields. These projects are then evaluated by a specific regional committee that, after assessing the quality and the potency of the proposal, gives its final approval and ensure the proper financial means to carry out the research project. Over the last years though, the competition on the international market has sensibly grown and local chemical companies had to further upgrade its innovative potential and improve their organization. Through an inquery carried out among stakeholders, one of the weaknesses emerged is represented by the lack of some professional profiles, one of these is the “expert of chemical formulations”; the Province has then started a specific action to satisfy this need and help the companies, by gathering enterprises and scholls to find a shared solution. To better explain the importance of this professional profile, here is a short overview on its main features.

Over the past 20 years, the Italian chemical industry has progressively converted from the “chemical synthesis” to “chemical formulations”. Chemistry of the formulations are all those activities aimed at the preparation of chemical industry products ready for use, like painting, adhesives, disinfectants, fertilizers, cosmetics, pharmaceuticals, pesticides, cleaning products, polymers and many others. The name of formulations comes from the fact that to obtain all the desired properties is necessary to use a large number of components, whose dosage is called “formula”. Today, although there is still a need for graduates with knowledge and experience in chemical synthesis (for example, Italy is a worldwide leader in active pharmaceutical ingredients), in the meantime the need for graduates with experience in chemical formulations has grown, because in this field there has been, and is expected to be, an increased demand for young chemists.

Through the ChemClust project the Province of Novara has deepened this issue, carrying out a specific research towards the local chemical industry, in order to identify and better describe the professional profile and the skills requested.

The “Omar” Technical Institute of Chemistry of Novara have focused its interest on this thematic, highlighting its wish to set up a specific course, moreover the Institute would be a pioneer as there is a lack of educational offer in Italy in this field.

For this purpose, the Institute has set up an addressed working group on the issue involving various local stakeholders; an academic program has already been set up and the Institute has started to contact the Italian Ministry for Education where the initiative has found interest and support.

Having said that, it is thus clear that this is quite a big innovation for our territory: the further development of the course will also involved the training of qualified teachers as a deeper cooperation between schools and industry. In fact, the main idea is to set up an ITS (Technical Higher Institute) under the supervision of the above mentioned “Omar” Institute: it means that the students will share both academic and practical training (directly in the companies involved), in order to be easily introduced in the world of labour once they have finished the course.

The ChemClust team of the Province will ensure its complete commitment for the carrying on of this notable initiative, also by sharing the results achieved at European level.

PARTNER PRESENTATION: **SAXONY-ANHALT**

Saxony-Anhalt as one of 16 federal states of the Federal Republic of Germany is situated in the western part of eastern Germany. This federal state, having an area of approximately 20,446 km², is bordered by Brandenburg in the northeast, Saxony and Thuringia in the south and Lower Saxony in the northwest. Saxony-Anhalt has a total population of around 2.317 million inhabitants (last update in 2011). Its state capital and seat of government is Magdeburg.

In 2011, the gross domestic product (GDP) of Saxony-Anhalt was about 53.8 billion EUR. Regarding main sectors of industry in this region, sectors such as chemical industry, plastic and rubber, food industry, metal production and processing, mechanical engineering and glass production can be named as very important. Yet, the chemical industry, as a more than hundred-years old traditional branch in the south of this region, is of structure-dominating meaning for the economy of this federal state. In Central Germany, Saxony-Anhalt is a key actor in this field. More precisely, the chemical industry has a high share in the total turnover of the processing industry in Saxony-Anhalt. Most notably, this branch constitutes an employment dynamo and is consequently of great importance for the economy of this region and Central Germany. Thus, Saxony-Anhalt is known for its highly developed chemical industry, with major production plants, constituting “the chemical triangle” at Leuna, Schkopau and Bitterfeld, 67 companies (more than 20 employees) and 15,825 employees in this sector. With regard to the sector structure, basic chemicals represent 64%, pharmaceuticals 16% and other chemicals 20%. Several universities, technical colleges, universities of applied science with partly chemical departments, four technology centres and 17 research institutes in Saxony-Anhalt constitute its research capacities in this field.

Investing in innovation is one high priority objective that allows facing future reinvigorated through promoting growth and competitiveness. Knowledge is becoming more and more a decisive factor of production. Being aware of this, Saxony-Anhalt aims at promoting knowledge.

Within the ChemClust project Saxony-Anhalt encourages the stakeholders in chemical parks to foster a closer cooperation with academia to become “knowledge sites”. This requires a close, cross-regional cooperation of large- scale and small-seized chemical businesses, chemical park operators, specialized service provider, science and research institutions, educational establishments, employers’ associations, politics and administration. As a result, this approach releases greater synergies among the players and therefore strongly supports the competitiveness of businesses and universities. The more different types of stakeholders contribute to this sectoral research and innovation, the more challenges in the future can be met by following this approach.

PARTNER PRESENTATION: **TEES VALLEY**

GEOGRAPHICAL AREA

Tees Valley is located in the North East of England and comprises the five local authority areas of Middlesbrough, Darlington, Stockton on Tees, Hartlepool and Redcar & Cleveland. The area has a population of 664,900[(1)] inhabitants spread over 794 km^2. It is home to 195 firms and just over 5,500 employees within the chemical sector.
The Tees Valley is the largest integrated chemical complex in the UK in terms of manufacturing capacity and the second largest in Western Europe. There are hundreds of firms in the process supply chain, employing 200,000 staff and by generating sales in excess of £10bn per annum the process industry based in Tees Valley is a key driver of not only the regional, but also the national economy.

In the Tees Valley, manufactures of inorganic products and the wholesale of chemicals employ the largest number of people. When combined, these two sub-sectors are responsible for 49.3% of chemical employment.

CHEMICAL COMPANIES

Tees Valley is home to a range of key clusters in the chemical sector - particularly at Wilton, Seal Sands and Billlingham - including refining, petrochemicals, speciality and fine chemicals, plastics, biotechnology and pharmaceuticals. Therefore, Tees Valley is recognised as the pre-eminent chemical production location in the UK due to its nationally-recognised centre of excellence, the Centre for Process Innovation at Wilton and having attracted over £750m of inward investment in the past 3 years alone from world-leading companies such as SABIC, Mitsubishi, Ineos, Air Products and Lotte.
Tees Valley is also home to world leading process companies such as Ensus, Lucite International, SABIC petrochemicals, Huntsman, Johnson Matthey and SembCorp.

KEY CHEMICAL COMPANIES LOCATED IN TEES VALLEY

Conoco Phillips: Conoco Phillips hosts the Norpipe pipeline from the North Sea which lands in the Tees Valley. This was established in the 1970's along with a large site at Seal Sands where the Teesside Oil Terminal, operated by a Conoco, is a crude oil reception, processing, storage and trans-shipment installation. The oil is exported from six jetties at Seal Sands to refineries around the UK and Europe.
Ensus: Is Europe's largest bio-refinery and produces 400 million litres of bio-ethanol a year. The investment in the Ensus facility, based at Wilton International in Redcar and Cleveland, was over £250 million.
Lucite International: The largest agricultural and construction chemical employer located in the Tees Valley.
SABIC Petrochemicals: SABIC operates the petrochemicals and aromatics facilities at the Wilton International and North Tees chemical complexes in Tees Valley.

CHEMICAL CLUSTER IN TEES VALLEY

The North East of England Process Industry Cluster (NEPIC) is a stand-alone company, limited by guarantee, which was created and is owned by its member companies to represent the companies and supply chain of the Process Industry in the region. NEPIC currently has 340 member companies and 80 associated members.

(1) ONS Sub national population projections (2011)

MOVE IN THE RIGHT DIRECTION: **CHEMCLUST'S POLICY RECOMMENDATIONS**

As the ChemClust pilot projects have come to an end, the involved partners had the opportunity to take stock of the situation and come to interesting conclusions. The recommendations emerged from each pilot project are precious and relevant examples of what has been done and what can be done to improve EU policies and funds architecture, definitely a step forward along the path of European cooperation.
The above mentioned recommendations are divided according to the three main fields the ChemClust project has planned to tackle, dealing with current and relevant topics closely related to the future development of the European chemical industry: CHEMICAL PARKS AS KNOWLEDGE SITES, OPEN INNOVATION and SKILLS FORESIGHT. Here is a brief summary of the findings and recommendations proposed by each pilot action:

Chemical Parks as Knowledge Sites: Sachsen-Anhalt, NRW, Usti

- The development of innovation profiles for chemical and industrial parks is an interesting tool for the strengthening of innovation capacities and identification of cooperation topics at regional, national and European level
- Increased transparency about available infrastructure and competence is important to facilitate cooperation. Similar innovation priorities in the regions are the basis for European cooperation and synergies
- The settlement of research infrastructure on chemical sites is an active strategy to offer R&D services to companies with focus on SME, which directly improves attractiveness for the settlement of new companies on the site. Similar approaches have been identified in several European regions
- The development of knowledge sites is depending on innovative financing and partnership solutions in view of Public-Private Partnerships, it is important to have a high commitment from the industry and an active contribution from R&D entities and support from Public Authorities
- The concept of knowledge sites should be actively integrated in the future innovation and cluster policy at European level - especially in the Regional Innovation Strategies (smart specialisation in the framework of EU 2020 Innovation Union)
- The allocation of future innovation funding on chemical parks can results in higher impact and better usage of existing R&D infrastructure under better involvement of SMEs

Open Innovation: Limburg, Asturias, Novara, Schleswig-Holstein

- Chemistry is an important enabler for many branches, not only for chemical regions but for ALL regions in Europe. Open innovation will help to innovate and to create more added value in chemicals Change of culture inside SMEs is needed in order to work with the open innovation model
- Leadpartner in open innovation can be a big company, a group of companies, a cluster, an university or combinations of these
- Creating a business case/model for open innovation is key
- Organising a dedicated workshop on open innovation with specialists and good examples can lead to enthusiasm and new ideas for the industry
- The development of open innovation model for chemical industry is an interesting tool for the strengthening of innovation capacities at regional, national and European level
- The settlement of triple helix players like research institutes, companies and public authorities on chemical sites enhance the development of open innovation activities. The public authority had an incentive role but in the end the industry is in the lead.

- The concept of open chemical innovation should be actively integrated in the future innovation and cluster policy at European level - especially in the Regional Innovation Strategies (smart specialisation in the framework of EU 2020 Innovation Union).
- The allocation of future open innovation funding on chemical sites can result in higher impact and more added value.
- ECRN will have to adopt the Open Chemical Innovation Policy and present it towards the EU as a meaningful instrument to foster innovation in the chemical regions. A demonstration project on this topic in the next structural funds period should be organised.
- Open innovation is a priority to be focussed on in the next Structural Funds Period.
- The Open Chemical innovation model should have a financial paragraph with a high leverage effect.
- All chemical regions interested in using the Open Innovation Model should lobby on regional and national level for use of Structural Funding in order to implement the elements of the Open Innovation Model. ECRN is needed to support this approach.
- A part of the Open innovation system is a monitoring and control system in order to constantly monitor the results of the funded actions.
- The Open innovation Model is an answer to the most heard critics on Structural Funds, such as slow and complicated procedures, too much paperwork and ineffective for SME's. The Open innovation Model provides simple and effective measures close to the goal public: SME's.
- In the end, the importance of Open Innovation and of the chemicals in Europe should lead to more attention for chemicals by the European Commissions and to a separate EU-approach for the sector. Open innovation must play a key role in this policy and the Structural Funds can then be used to support this EU-policy.

Skills Foresight: Cheshire West and Chester, Tees Valley, Novara, Mazovia

- Demand is particular prevalent at the technician level in the regions
- Workers need to be multi-skilled e.g. time management, project management, team working skills
- Commercial, business to business and innovation management skills are important
- There are occupations/roles the industry needs that are not visible as career options
- Need to improve frameworks for technician level skills and training for graduate level and above, skills to be brought into alignment
- High importance to improve the image of the sector
- Operation excellence (to improve competitiveness of existing manufacturing), materials (to build upon a strong but diverse industrial base) and biotechnology (to capitalise upon emerging science) are areas of importance that will demand new or enhance skills.
- Develop stronger links between schools, colleges, universities and businesses/industry in order to improve the current training offer. There is a need for more direct engagement and better communication between schools, colleges, universities and industry and it is important that any solutions are led by employer demand. Any programmes/project designed need to be tailored specifically to the chemical industry. Therefore, providing young people and adults with the skills and qualifications needed for the opportunities available in the sector.
- There is a need for a range of solutions that encourage engagement with the chemical industry across all age groups. There are particular gaps in the supply of education and enrichment activities for children and young people. Solutions may include ensuring high quality careers information, advice and guidance is available; increasing the opportunities to experience the workplace; and raising interest in and changing the perceptions of the sector for parents.

UPCOMING EVENTS

22nd November 2012

> Final dissemination conference, Brussels

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