



ChemClust

Chemical Cluster Development in European Regions

Benchmark Report

Summary December 2011





Chemical Cluster Development in European Regions

Improving Innovation Capacity of European Chemical Clusters

Examples of Best Practice



Contents

1.	Introduction	3
2.	Summary of the Best Practices Identified	4
2.1.	Saxony-Anhalt	4
2.2.	North Rhine-Westphalia	5
2.3.	Province of Novara	9
2.4.	Mazovia	11
2.5.	Tees Valley	12
2.6.	Usti Region	14
2.7.	Province of Limburg	16
2.8.	Principado de Asturias	18
2.9.	Cheshire West	21
3.	Best Practice Assessment	23
3.1.	Best practices grouped by specific characteristics	23
3.2.	Global Assessment	34
3.3.	Future actions and possible areas for Cluster Cooperation and Transfer of Best Practices	40
4.	Full description of the good practices	42
4.1.	Saxony-Anhalt	42
4.2.	North Rhine-Westphalia	48
4.3.	Province of Novara	53
4.4.	Mazovia	58
4.5.	Tees Valley	61
4.6.	Ustí Region	69
4.7.	Province of Limburg	73
4.8.	Principado de Asturias	77
4.9.	Cheshire West & Chester	88
5.	Additional annexes	90
5.1.	CHEMaterials Campus	90
5.2.	Open Innovation	96
5.3.	“Mazovian Innovator” Contest	103

1. Introduction

The ChemClust regions have undertaken, in cooperation with the local chemical clusters, a compilation of the best practice to promote innovation and the improvement of competitiveness of the Chemical and Process Industries. Overall, 25 good practices have been identified in nine regions.

The topics of the good practice are quite varied. Two of the reported good practices, from NRW and Tees Valley, are aiming at building or strengthening the connection between industry and society, to raise the awareness of the needs and the contribution of industry to wealth and well being, and increase the support to industrial activity and its attractiveness for professional careers.

The cooperation between companies is also a popular topic in good practices. NRW, Novara, Saxony-Anhalt and Asturias are reporting initiatives that bring companies together to develop joint projects.

Good practices also talk about public policies and private initiatives to improve facilities in chemical related research, training or educational centres: labs (Usti), R&D Centres (NRW, Saxony-Anhalt, Tees Valley). It seems clear that chemical industry requires a continuous flow of investments to update the supporting research and development infrastructure. It is a capital and technology driven sector and therefore, companies need to be in front of technology development to remain competitive.

Infrastructure and other fixed assets provide the basic support to innovation. However, innovation is produced by knowledge and talent. That is widely recognized by ChemClust regions in the good practice collected. Some of them refer to concrete R&D projects in areas where technology breakthroughs can be produced; others are aiming at raising industry and innovation drivers' awareness and information on innovation (Mazovie, Limburg) or at fostering innovation and business creation (Limburg, Tees Valley). Large companies are quite aware of the need of continuous innovation, but smaller companies, especially in less developed or traditional industrial regions, are still less aware of the importance of innovation to protect and improve their competitiveness. Regions show public policies and public-private cooperation initiatives that have successfully increase innovation in the chemical sector and across the industry. New models on innovation, such as Open Innovation schemes, are also reported; they are beginning to change the way innovation is produced, in a knowledge based and ever connected economy.

Human capital is a key factor on the competitiveness of the companies, also in capital based industries like chemical industry. Regions have reported a number of initiatives directly or indirectly related to human capital training. The initiatives cover a full range of training activities, from framework training schemes to specific training actions in key industry areas, such as production, safety, or environmental protection and remediation.

Good practices recorded are therefore addressing the key areas for improving the industry competitiveness factors: fixed assets, human capital and innovation strategy. They strongly share very close and quite interrelated policy objectives:

- Retain industrial base and avoid relocation.
- Increase attractiveness of the regions as chemical industry location.
- Foster business creation.
- Improve industry competitiveness.
- Increase R&D and innovation potential.
- Connect industry and society.

Such objectives could well become the foundations for any advanced industrial policy and may well be applied to any industrial sector. The good practice identified by the ChemClust regions offer a catalogue of measures that, with the obvious adaptation to the specific situation of each region, can help implementing such policy.

The best practices have been analysed from four points of view:

- Sector focus: some of the good practices are specifically addressed to the chemical and process industries; others have taken a multisectoral approach. It is also possible that some of the former, having a chemical and process industry origin, may be transferred into other industrial sectors.
- Policy objectives: from the assessment of the good practices, some common policy objectives have been identified: Innovation, Human capital, Improvement of Competitiveness, Environmental protection, Industry-society connection, Increase Regional Attractiveness, Attraction of Inward investment. Some of the good practices may be addressing two or even more of these policy objectives.
- Policy instruments and measures: good practices described in the report are using a different mix of instruments and measures: investment in infrastructure and other fixed assets, specific regulations, financial support schemes, creation or development of R&D facilities, R&D and Technology Transfer, Training, different kinds of soft support services, communication and dissemination actions, business cooperation, and specific research and studies. Again, most of the good practices do not use just a single policy instrument, but a mix of them, and therefore they may be found under different categories.
- Transferability and innovativeness: finally, an appraisal of the degree of transferability has been included. Two criteria have been used: transferability in itself, considering the feasibility of replicating the good practice in other regions, and therefore under different conditions, and the innovative character of the good practice described. To this report, innovativeness has not been connected to the technology content of the good practice (R&D projects), but with the objectives and instruments used. Therefore, funding an R&D project may not be innovative in itself, but only if funding mechanisms (or other instruments used) are original or include some kind of new features.



2. Summary of the Best Practices Identified

To complete the analysis of the Best Practices compiled by the ChemClust regions for this Improving Innovation Capacity of European Chemical Clusters project, the report goes through the list of the good practices collected in each region to give a first view on their content, approach, results and future development.

Each of the good practice is analysed according to the assessment criteria used in this report. Transferability is presented in front, and includes an additional consideration of the quality of the information provided as good practice description (full descriptions can be found as an annexe to this document).

2.1. Saxony-Anhalt

2.1.1. Best practices identified

- Development of Innovation Location Network of Central German Chemical Parks (CeChemNet).
- Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis.
- Integration of Lignite as an alternative raw material into Chemical industry (IBI).

2.1.2. General Remarks

The best practices identified in Saxony-Anhalt refer very much to the improvement of the scientific, research and technology base available to the companies in the region to increase innovation capacity and to attract companies to locate there. The best practices show that cooperation between companies and between companies and institutions is very useful to enhance the competitiveness and the profile of the chemical industry sites. Another good practice is more focused on a specific technological development. Its key feature is the identification and pursue of an “opportunity window”, based on a thorough technical and financial analysis: lignite is identified as an alternative raw material into chemical industry, and different measures are taken to develop this opportunity further.

The projects reported by Saxony-Anhalt show the good results obtained by focused research & innovation initiatives based on actual strengths of the companies. As other good practices also show, the availability of research facilities clearly increases the possibilities for innovation. The implementation of the project showed that the full involvement of SMEs in innovation processes depends very much on an increased financial support.

Saxony-Anhalt is keen to develop alternative financial instruments to promote SME involvement. Cooperation is other key area for futures actions both between local companies to carry on cooperative innovation projects and to increase international technology cooperation.

2.1.3. Main features of best practices identified

Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)		
Transferability	Innovative character: Degree of transferability: Detail of information provided:	High High Good
Sector Focus	Focused on the Chemical Sector	
Policy Objectives	Innovation focused Human capital Competitiveness Improvement Environmental protection Industry-society connection Increase Regional Attractiveness Attraction of Inward investment	
Measures	Infrastructure and industrial investment R&D Facilities Communication and dissemination Business Cooperation Research and studies	

Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis		
Transferability	Innovative character: Degree of transferability: Detail of information provided:	High Low Good
Sector Focus	Focused on the Chemical Sector	
Policy Objectives	Innovation focused Human capital Competitiveness Improvement Increase Regional Attractiveness Attraction of Inward investment	
Measures	Infrastructure and industrial investment R&D Facilities R&D and Technology Transfer Support services Business Cooperation	

Integration of Lignite as an alternative raw material into Chemical industry		
Transferability	Innovative character: Degree of transferability: Detail of information provided:	High Low Good
Sector Focus	Focused on the Chemical Sector Potential for multi-sectoral implementation	
Policy Objectives	Innovation focused Competitiveness Improvement Environmental protection	
Measures	Financial support R&D Facilities R&D and Technology Transfer Business Cooperation Research and studies	

2.2. North Rhine-Westphalia

2.2.1. Best practices identified

- Chemergie.
- Alliance pro industry and sustainability.
- Network Surface North Rhine-Westphalia.

2.2.2. General Remarks

Public-private partnerships and company cooperation are the underlying principles of the NRW good practices. A wide and comprehensive initiative with public and private support is undertaking a widespread effort to communicate the importance of industry in regional economy (and in wealth generation) and turn it an integral part of society, to overcome or to reduce unjustified resistances against industrial activity. The initiative is based on communicating the relevance and impact of innovation produced by regional companies. It will also help to raise awareness on innovation among companies and population. Other good practices reported are dealing with more specific cooperative innovation initiatives (energy, surface treatment).

NRW good practices reported show that technology cooperation may bring remarkable results in a short time. Sometimes, cooperation is regarded as an obstacle to rapid implementation, as it requires building partner agreement. NRW shows that coordination of broad initiatives that involve many members may be difficult but it brings a good impact.

Another lesson to be learned from NRW projects is that achieving results sometimes requires strong initial support, which translates into generous funding. Instead of spreading resources too thin, it may be more efficient to identify the right options, and focus on them. NRW intends to continue and increase social dialogue on the relevance of industry, paying increased attention to innovation and environmental issues. It is hoped that the innovation networks built will keep developing innovative projects (Fuel cell power plant, surface technologies).

2.2.3. Main features of best practices identified

Implementation of the IBIS consortium's cooperative model, through the new device of the "network contract"		
Transferability	Innovative character:	High
	Degree of transferability:	Medium
	Detail of information provided:	Good
Sector Focus	Potential for multi-sectoral implementation	
Policy Objectives	Innovation focused Competitiveness Improvement	
Measures	Financial support R&D and Technology Transfer Support services Business Cooperation Research and studies	

A model of a new governance in the framework of the innovative bio-based and sustainable chemistry

Transferability	Innovative character: High Degree of transferability: High Detail of information provided: Good
Sector Focus	Focused on the Chemical Sector
Policy Objectives	Innovation focused Competitiveness Improvement Environmental protection Industry-society connection Increase Regional Attractiveness Attraction of Inward investment
Measures	R&D and Technology Transfer Support services Communication and dissemination Business Cooperation Research and studies

2.4. Mazovia

2.4.1. Best practices identified

- "Mazovian Innovator" Contest.
- Mazovian Network of Information - Advisory Centres for Innovation (pilot project, first stage - building a network).

2.4.2. General Remarks

Mazovian good practices are focusing on raising industry and innovation drivers' awareness about innovation and on offering high value information, advice and support to increase innovation production.

These initiatives are well adapted to the needs and situation of the companies and the innovation network in the region. The innovation contest promotes innovation and dissemination of innovation opportunities to companies that can access the information. At the same time, it raises the awareness of the companies and promotes emulation.

As in other regions, Mazovia has identified that SMEs do need an increased support to undertake innovation activities, both in relation to knowledge and funding. Therefore, it is expected to continue the innovation dissemination activities and building stronger network between researchers and industries to foster technology transfer.



2.4.3. Main features of best practices identified

“Mazovian Innovator” Contest		
Transferability	Innovative character: Degree of transferability: Detail of information provided:	Low High Good
Sector Focus	Potential for multi-sectoral implementation	
Policy Objectives	Innovation focused Human capital Competitiveness Improvement Industry-society connection	
Measures	Measures Communication and dissemination	

Mazovian Network of Information - Advisory Centres for Innovation		
Transferability	Innovative character: Degree of transferability: Detail of information provided:	Low Medium Good
Sector Focus	Potential for multi-sectoral implementation	
Policy Objectives	Innovation focused Human capital Competitiveness Improvement Industry-society connection	
Measures	R&D and Technology Transfer Support services Communication and dissemination	

The Programme has been running for nearly 10 years involving nearly 40,000 children, and there are clear indications of having a strong impact on children and teacher attitude towards science and industry. Now, the programme may be expanded to other regions if funding is available.

This initiative may also be improved and strengthened if it develops a more intensive work with teachers, as they are the true multipliers in this type of programmes. Another area of improvement is the involvement of industry to develop teaching resources.

Other good practices reported are related to innovation and business creation, using different instruments. Innovation is promoted through a research and technology centre which supports technology development and transfer. The Centre works on the philosophy of building innovation capacities, transfer to companies and retain knowledge and capabilities, to be able to replicate and to help other companies. A special purpose Incubator for the Chemical sector provides dedicated support services and special purpose incubation facilities to start-ups. The idea is to provide a ‘plug and play’ facility for SME to set up, allowing them to dedicate their funding to technology and business development. As a special purpose incubator, it also offer specialized added value services in key areas such as IP, Marketing,...

2.5.3. Main features of best practices identified

Children Challenging Industry Programme		
Transferability	Innovative character: Degree of transferability: Detail of information provided:	High High Good
Sector Focus	Potential for multi-sectoral implementation	
Policy Objectives	Human capital Environmental protection Industry-society connection	
Measures	Communication and dissemination	

Innovation Accelerator - Incubation Facilities		
Transferability	Innovative character: Degree of transferability: Detail of information provided:	Low High Basic
Sector Focus	Focused on the Chemical Sector Potential for multi-sectoral implementation	
Policy Objectives	Human capital Competitiveness Improvement Attraction of Inward investment	
Measures	Infrastructure and industrial investment Support services	

2.5. Tees Valley

2.5.1. Best practices identified

- Children Challenging Industry Programme.
- Innovation Accelerator: Incubation Facilities and Support Services.
- Centre for Process Innovation.

2.5.2. General Remarks

Tees Valley good practices cover a range of different activities and policy areas. The Children Challenging Industry Programme falls under a broad category of initiatives trying to maintain and recover the close relationship between the industry and the industrial communities. That relationship was much stronger formerly, when industry was the main employment source; now part of it has been somehow lost. The programme intends to build stronger relationship between chemical industry and communities through school-children activities. It also intends to promote industry as a professional career and therefore to attract human capital to industry.

Innovation Accelerator - Support Services

Transferability	Innovative character: Degree of transferability: Detail of information provided:	Low High Basic
Sector Focus	Focused on the Chemical Sector Potential for multi-sectoral implementation	
Policy Objectives	Innovation focused Human capital Competitiveness Improvement Attraction of Inward investment	
Measures	Financial support R&D and Technology Transfer Training Support services Communication and dissemination Research and studies	

2.6.2. General Remarks

University is a key agent in local innovation systems. It can provide knowledge to companies but it also can provide up to date research facilities that can be used by local companies. Those are the basis of the good practices reported by the Usti region, that include the strengthening of the economic impact of Palacký University in the region through measures to make the technology and knowledge developed at the University available to companies in the region, and also the improvement of chemical related scientific facilities.

Both soft (dissemination of information) and hard (improvement of research infrastructure) measures will be helping to build closer and stronger links between the University and the companies training and educational centres and their connection with local companies.

Another good practice refers to specific research to increase and improve the production of energies from renewable sources, such as biomass.

Centre for Process Innovation

Transferability	Innovative character: Degree of transferability: Detail of information provided:	High Medium Medium
Sector Focus	Potential for multi-sectoral implementation	
Policy Objectives	Innovation focused Human capital Competitiveness Improvement Environmental protection Increase Regional Attractiveness Attraction of Inward investment	
Measures	Infrastructure and industrial investment R&D Facilities R&D and Technology Transfer Training Support services	

Centre for Advanced Laboratory Techniques (CALT)

Transferability	Innovative character: Degree of transferability: Detail of information provided:	Low Medium Basic
Sector Focus	Focused on the Chemical Sector Potential for multi-sectoral implementation	
Policy Objectives	Innovation focused Human capital Competitiveness Improvement	
Measures	R&D Facilities R&D and Technology Transfer Training Support services	

New procedures and processes of biomass gasification

Transferability	Innovative character: Degree of transferability: Detail of information provided:	Medium Low Basic
Sector Focus	Focused on the Chemical Sector Potential for multi-sectoral implementation	
Policy Objectives	Innovation focused Environmental protection Industry-society connection	
Measures	R&D and Technology Transfer	

2.6. Usti Region

2.6.1. Best practices identified

- Strengthening the economic importance of the Palacký University in Olomouc Region.
- Centre for Advanced Laboratory Techniques (CALT).
- New procedures and processes of biomass gasification.



Transferability	Innovative character: Degree of transferability: Detail of information provided:	Low Low Basic
Sector Focus	Potential for multi-sectoral implementation	
Policy Objectives	Innovation focused Human capital Competitiveness Improvement	
Measures	Communication and dissemination Research and studies	

2.7. Province of Limburg

2.7.1. Best practices identified

- CHEMaterials Campus.
- Open Innovation.

2.7.2. General Remarks

Innovation is clearly the main focus of good practices reported by the Province of Limburg. The measures to foster innovation and innovative business creation implemented are going beyond traditional approaches to try new ones, such as Open Innovation. Open Innovation is becoming a successful innovation methodology in a fully networked world. Networking increases the speed of innovation. Open Innovation brings up innovative ideas, reducing the cost of development by a process of screening and selection of more promising ones that can developed through different IP mechanisms.

It provides enterprises and institutions the opportunity to use, in a world of widespread knowledge, not only their own research and development opportunities, but also those of others. In addition, proprietary inventions not in use can be brought out (e.g. through licensing, joint venture programs, spin-offs). Also they have the opportunity to focus more on their core competencies.

Limburg is applying the Open Innovation paradigm to the chemical sector, to increase the attractiveness of the area as preferential location for chemical and material companies that are looking for intensive innovation locations. The objective is to gain a world leading position on innovation for the chemical and material sector. Future actions include the development of a Chemelot Campus.

In any case, although the application to the Chemical Sector may depend on the specific industrial profile of the region, Open Innovation components are frequently available in every region, so it can be applied to any other sector/region. Therefore, there are important possibilities for exchanging information and experiences. In March 2010, the Chemelot Campus declaration of intent was signed by DSM, UM/MUMC+ and the Province of Limburg. By

means of the creation of the Chemelot Campus Consortium, the three parties are expressing their commitment with regard to the expansion of the Chemelot Campus over a period of 10 years. The Consortium will act as a broker and will therefore be the binding factor at the Chemelot Campus and in the region when it comes to CHEMaterials and the link with health and high-tech systems.

The aim of the three parties in the next 10 years is to develop the Chemelot Campus into a location where research, education, valorisation and commercial activities can take place in close harmony. The partners consider the development of a campus by CHEMaterial open innovation to be a unique and superior opportunity to bring about that acceleration in a collaborative context.

The campus focuses on the interface of chemical engineering, advanced organic/bioorganic chemistry and performance/biobased performance materials. CHEMaterials is taken to include the following areas that offer the greatest opportunities for the Campus:

- Performance materials;
- Biobased materials;
- Biomedical materials;
- Biotechnology / biosynthesis;
- Analytical support.

A strong cluster encourages the innovation climate. The collaboration is therefore focusing on stimulating open innovation for the benefit of knowledge retention and knowledge development in the region. There are currently about 1,200 FTEs at Chemelot Campus. However, the Chemelot Campus has a wider ambition, with the central quantitative objective of the Consortium and the entrepreneurs being to employ 2,000 full-time knowledge workers in 2019. These employees will come from various training levels such as senior secondary vocational education, higher professional education and university and will work in various areas of knowledge such as education, research and business.

2.7.3. Main features of best practices identified

CHEMaterials Campus		
Transferability	Innovative character: Degree of transferability: Detail of information provided:	High High Good
Sector Focus	Focused on the Chemical Sector Potential for multi-sectoral implementation	
Policy Objectives	Innovation focused Human capital Competitiveness Improvement Increase Regional Attractiveness Attraction of Inward investment	
Measures	Training Support services Communication and dissemination Business Cooperation Research and studies	

Open Innovation

Transferability	Innovative character: High Degree of transferability: High Detail of information provided: Good
Sector Focus	Potential for multi-sectoral implementation
Policy Objectives	Innovation focused Human capital Competitiveness Improvement Industry-society connection
Measures	Training Support services Communication and dissemination Business Cooperation Research and studies

2.8.3. Main features of best practices identified

Cross Sector Cooperation in the Chemical and Process Industries

Transferability	Innovative character: Low Degree of transferability: Medium Detail of information provided: Good
Sector Focus	Focused on the Chemical Sector
Policy Objectives	Human capital Competitiveness Improvement Environmental protection
Measures	Training Support services Communication and dissemination Business Cooperation Research and studies

2.8. Principado de Asturias

2.8.1. Best practices identified

- Cross sector cooperation.
- Site Selection in the Chemical and Process Industries.
- Guide on Hazard Prevention in the Chemical and Process Industries.
- Compendium of Good Environmental Practices based on the Technical sector experience.
- Training and Technology Transfer between Academia and the Chemical and Process Industries.

2.8.2. General Remarks

Good practices in Asturias are connected to the activity of the Association of Chemical and Process Industries. Good practices are focusing on some critical issues for the chemical industry: site selection, environmental issues, safety at work and human capital training. The initiatives undertaken by the industry have raised the environmental and safety awareness of managers and employees. All initiatives have come from strong involvement of the senior company staff, although they have been supported by regional government. Leadership and personal involvement of the company staff seem to be key factors for successful business cooperation. Chemical sector in Asturias is composed of companies belonging to different sub-sectors and cross sector cooperation have been offering good results, as there is less competition among the firms. Also, the initiatives and results can be more easily transferable into other sectors, such as food processing industry and other process industries.

The Asturias Chemical Cluster intends to continue, expand or transfer the good practices developed. They are particularly interested in finding external partners to cooperate with in environment, hazard prevention, economics, site selection, training (e-training platform)

Good Environmental Practices

Transferability	Innovative character: Medium Degree of transferability: High Detail of information provided: Good
Sector Focus	Focused on the Chemical Sector Potential for multi-sectoral implementation
Policy Objectives	Human capital Competitiveness Improvement Environmental protection
Measures	Regulations Communication and dissemination Research and studies

Implementation of Safety Good Practices in Chemical and Process Industries

Transferability	Innovative character: Low Degree of transferability: Medium Detail of information provided: Good
Sector Focus	Focused on the Chemical Sector Potential for multi-sectoral implementation
Policy Objectives	Human capital Competitiveness Improvement Environmental protection
Measures	Regulations Training Support services Communication and dissemination Research and studies

**Site Selection in the Chemical and Process Industries**

Transferability	Innovative character: Degree of transferability: Detail of information provided:	Medium High Good
Sector Focus	Focused on the Chemical Sector	
Policy Objectives	Competitiveness Improvement Increase Regional Attractiveness Attraction of Inward investment	
Measures	Communication and dissemination Research and studies	

Training and Technology Transfer between Academia and the Chemical and Process Industries

Transferability	Innovative character: Degree of transferability: Detail of information provided:	Medium Medium Good
Sector Focus	Focused on the Chemical Sector	
Policy Objectives	Innovation focused Human capital Competitiveness Improvement Environmental protection	
Measures	R&D and Technology Transfer Training Communication and dissemination Business Cooperation Research and studies	

2.9. Cheshire West

2.9.1. Best practices identified

- Development of Gold Standard Frameworks.

2.9.2. General Remarks

The Cheshire good practice refers to a nationwide UK skill framework developed by the industry to improve human capital skills to increase industry competitiveness and profitability. The Gold Standard sets out the skills required for world class performance in key job roles in the process industries.

The frameworks are benchmarks to compare the level of collective and/or individual competence against the Gold Standard for each role. Then, it helps to guide any training according the weaknesses or failures detected. One of the lessons learned is that there is a need for flexible training for a broad range of companies / sectors. The Gold Standard is being applied to all process industries and may expand to different functions in the chemical industry.

2.9.3. Main features of best practices identified

Development of Gold Standard Frameworks

Transferability	Innovative character: Degree of transferability: Detail of information provided:	Medium Medium Medium
Sector Focus	Potential for multi-sectoral implementation	
Policy Objectives	Human capital Competitiveness Improvement	
Measures	Regulations Training Support services Communication and dissemination	

3. Best Practice Assessment

To assess the best practices and make easier to identify them, they have been sorted out according to their more significant features. Afterwards, the common features are highlighted and analysed.

3.1. Best practices grouped by specific characteristics.

3.1.1. Sector Focus

Region	Good practices focusing on the Chemical Sector
Saxony-Anhalt	Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis
	Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)
	Integration of Lignite as an alternative raw material into Chemical industry
North Rhine-Westphalia	Chemergie
	Network Surface North Rhine-Westphalia
Usti	Centre for Advanced Laboratory Techniques (CALT)
	New procedures and processes of biomass gasification
Limburg	CHEMaterials Campus
Novara	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry

Asturias	Cross Sector Cooperation in the Chemical and Process Industries
	Good Environmental Practices
	Implementation of Safety Good Practices in Chemical and Process Industries
	Site Selection in the Chemical and Process Industries
Tees Valley	Training and Technology Transfer between Academia and the Chemical and Process Industries
	Innovation Accelerator - Incubation Facilities
	Innovation Accelerator - Support Services

Region	Good practices with potential multi-sectoral focus
Saxony-Anhalt	Integration of Lignite as an alternative raw material into Chemical industry
North Rhine-Westphalia	Alliance pro industry and sustainability
	Network Surface North Rhine-Westphalia
Mazovia	"Mazovian Innovator" Contest
	Mazovian Network of Information - Advisory Centres for Innovation
Usti	Centre for Advanced Laboratory Techniques (CALT)
	New procedures and processes of biomass gasification
	Strengthening the economic importance of the Palacký University in Olomouc Region
Limburg	CHEMaterials Campus
	Open Innovation
Novara	Implementation of the IBIS consortium's cooperative model, through the new device of the "network contract"
Asturias	Good Environmental Practices
	Implementation of Safety Good Practices in Chemical and Process Industries
Cheshire West & Chester	Development of Gold Standard Frameworks
Tees Valley	Children Challenging Industry Programme
	Centre for Process Innovation
	Innovation Accelerator - Incubation Facilities
	Innovation Accelerator - Support Services

Saxony-Anhalt	Integration of Lignite as an alternative raw material into Chemical industry
North Rhine-Westphalia	Chemergie
	Network Surface North Rhine-Westphalia
Mazovia	"Mazovian Innovator" Contest
	Mazovian Network of Information - Advisory Centres for Innovation
Usti	Centre for Advanced Laboratory Techniques (CALT)
	New procedures and processes of biomass gasification
	Strengthening the economic importance of the Palacký University in Olomouc Region
Limburg	CHEMaterials Campus
	Open Innovation
Novara	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry
	Implementation of the IBIS consortium's cooperative model, through the new device of the "network contract"
Asturias	Training and Technology Transfer between Academia and the Chemical and Process Industries
Tees Valley	Centre for Process Innovation
	Innovation Accelerator - Incubation Facilities
	Innovation Accelerator - Support Services

Region	Good practices in human resources
Saxony-Anhalt	Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis
	Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)
North Rhine-Westphalia	Chermegie
	Network Surface North Rhine-Westphalia
Mazovia	"Mazovian Innovator" Contest
	Mazovian Network of Information - Advisory Centres for Innovation
Usti	Centre for Advanced Laboratory Techniques (CALT)
	Strengthening the economic importance of the Palacký University in Olomouc Region
Limburg	CHEMaterials Campus
	Open Innovation
Asturias	Cross Sector Cooperation in the Chemical and Process Industries
	Good Environmental Practices
	Implementation of Safety Good Practices in Chemical and Process Industries
	Training and Technology Transfer between Academia and the Chemical and Process Industries

3.1.2. Policy Objectives

Region	Good practices with innovation focus
Saxony-Anhalt	Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis
	Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)



Cheshire West & Chester	Development of Gold Standard Frameworks
Tees Valley	Centre for Process Innovation
	Children Challenging Industry Programme
	Innovation Accelerator - Incubation Facilities
	Innovation Accelerator - Support Services

Region	Good practices in competitiveness improvement
Saxony-Anhalt	Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis
	Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)
	Integration of Lignite as an alternative raw material into Chemical industry
North Rhine-Westphalia	Chemergie
	Network Surface North Rhine-Westphalia
Mazovia	"Mazovian Innovator" Contest
	Mazovian Network of Information - Advisory Centres for Innovation
Ustí	Centre for Advanced Laboratory Techniques (CALT)
	Strengthening the economic importance of the Palacký University in Olomouc Region
Limburg	CHEMaterials Campus
	Open Innovation
Novara	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry
	Implementation of the IBIS consortium's cooperative model, through the new device of the "network contract"
Asturias	Cross Sector Cooperation in the Chemical and Process Industries
	Good Environmental Practices
	Implementation of Safety Good Practices in Chemical and Process Industries
	Site Selection in the Chemical and Process Industries
	Training and Technology Transfer between Academia and the Chemical and Process Industries
Cheshire West & Chester	Development of Gold Standard Frameworks
Tees Valley	Centre for Process Innovation
	Innovation Accelerator - Incubation Facilities
	Innovation Accelerator - Support Services

Region	Good practices in environment
Saxony-Anhalt	Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)

Saxony-Anhalt	Integration of Lignite as an alternative raw material into Chemical industry
North Rhine-Westphalia	Alliance pro industry and sustainability
	Chemergie
	Network Surface North Rhine-Westphalia
Ustí	New procedures and processes of biomass gasification
Novara	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry
Asturias	Cross Sector Cooperation in the Chemical and Process Industries
	Good Environmental Practices
	Implementation of Safety Good Practices in Chemical and Process Industries
	Training and Technology Transfer between Academia and the Chemical and Process Industries
Tees Valley	Centre for Process Innovation
	Children Challenging Industry Programme

Region	Good practices in Industry-Society connection
Saxony-Anhalt	Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)
North Rhine-Westphalia	Alliance pro industry and sustainability
Mazovia	"Mazovian Innovator" Contest
	Mazovian Network of Information - Advisory Centres for Innovation
Ustí	New procedures and processes of biomass gasification
Limburg	Open Innovation
Novara	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry
Tees Valley	Children Challenging Industry Programme

Region	Good practices in Regional attractiveness
Saxony-Anhalt	Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis
	Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)
North Rhine-Westphalia	Alliance pro industry and sustainability
	Chemergie
Limburg	CHEMaterials Campus
Novara	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry

Asturias	Site Selection in the Chemical and Process Industries
Tees Valley	Centre for Process Innovation

Region	Good practices in attraction of inward investment
Saxony-Anhalt	Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis
	Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)
North Rhine-Westphalia	Alliance pro industry and sustainability
	Chemergie
Limburg	CHEMaterials Campus
Novara	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry
Asturias	Site Selection in the Chemical and Process Industries
Tees Valley	Centre for Process Innovation
	Innovation Accelerator - Incubation Facilities
	Innovation Accelerator - Support Services

Region	Good practices in financial support
Saxony-Anhalt	Integration of Lignite as an alternative raw material into Chemical industry
North Rhine-Westphalia	Chemergie
Novara	Implementation of the IBIS consortium's cooperative model, through the new device of the "network contract"
Tees Valley	Innovation Accelerator - Support Services

Region	Good practices in R&D facilities
Saxony-Anhalt	Integration of Lignite as an alternative raw material into Chemical industry
North Rhine-Westphalia	Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)
	Integration of Lignite as an alternative raw material into Chemical industry
	Chemergie
Usti	Centre for Advanced Laboratory Techniques (CALT)
Tees Valley	Centre for Process Innovation

3.1.3. Policy Instruments and Measures

Region	Good practices in infrastructure & industrial investment
Saxony-Anhalt	Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis
	Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)
North Rhine-Westphalia	Chemergie
Tees Valley	Centre for Process Innovation
	Innovation Accelerator - Incubation Facilities

Region	Good practices in regulations
Novara	Implementation of the IBIS consortium's cooperative model, through the new device of the "network contract"
Asturias	Good Environmental Practices
	Implementation of Safety Good Practices in Chemical and Process Industries
Cheshire West & Chester	Development of Gold Standard Frameworks

Region	Good practices in R&D tech transfer
Saxony-Anhalt	Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis
	Integration of Lignite as an alternative raw material into Chemical industry
North Rhine-Westphalia	Chemergie
	Network Surface North Rhine-Westphalia
Mazovia	Mazovian Network of Information - Advisory Centres for Innovation
Usti	Centre for Advanced Laboratory Techniques (CALT)
	New procedures and processes of biomass gasification
Novara	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry
	Implementation of the IBIS consortium's cooperative model, through the new device of the "network contract"
Asturias	Training and Technology Transfer between Academia and the Chemical and Process Industries
Tees Valley	Centre for Process Innovation
	Innovation Accelerator - Support Services



Region	Good practices in training
North Rhine-Westphalia	Network Surface North Rhine-Westphalia
Ustí	Centre for Advanced Laboratory Techniques (CALT)
Limburg	CHEMaterials Campus Open Innovation
Asturias	Cross Sector Cooperation in the Chemical and Process Industries Implementation of Safety Good Practices in Chemical and Process Industries Training and Technology Transfer between Academia and the Chemical and Process Industries
Cheshire West & Chester	Development of Gold Standard Frameworks
Tees Valley	Centre for Process Innovation Innovation Accelerator - Support Services

Region	Good practices in support services
Saxony-Anhalt	Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis
North Rhine-Westphalia	Chemergie Network Surface North Rhine-Westphalia
Mazovia	Mazovian Network of Information - Advisory Centres for Innovation
Ustí	Centre for Advanced Laboratory Techniques (CALT)
Limburg	CHEMaterials Campus Open Innovation
Novara	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry Implementation of the IBIS consortium's cooperative model, through the new device of the "network contract"
Asturias	Cross Sector Cooperation in the Chemical and Process Industries Implementation of Safety Good Practices in Chemical and Process Industries
Cheshire West & Chester	Development of Gold Standard Frameworks
Tees Valley	Centre for Process Innovation Innovation Accelerator - Incubation Facilities Innovation Accelerator - Support Services

Region	Good practices in communication & dissemination
Saxony-Anhalt	Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)
North Rhine-Westphalia	Alliance pro industry and sustainability Chemergie Network Surface North Rhine-Westphalia
Mazovia	"Mazovian Innovator" Contest Mazovian Network of Information - Advisory Centres for Innovation
Ustí	Strengthening the economic importance of the Palacký University in Olomouc Region
Limburg	CHEMaterials Campus Open Innovation
Novara	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry
Asturias	Cross Sector Cooperation in the Chemical and Process Industries Good Environmental Practices Implementation of Safety Good Practices in Chemical and Process Industries Site Selection in the Chemical and Process Industries Training and Technology Transfer between Academia and the Chemical and Process Industries
Cheshire West & Chester	Development of Gold Standard Frameworks
Tees Valley	Children Challenging Industry Programme Innovation Accelerator - Support Services

Region	Good practices in business cooperation
Saxony-Anhalt	Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis Development of Innovation Location Network of Central German Chemical Parks (CeChemNet) Integration of Lignite as an alternative raw material into Chemical industry
North Rhine-Westphalia	Alliance pro industry and sustainability Chemergie Network Surface North Rhine-Westphalia
Limburg	CHEMaterials Campus Open Innovation
Novara	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry Implementation of the IBIS consortium's cooperative model, through the new device of the "network contract"

Asturias	Cross Sector Cooperation in the Chemical and Process Industries
	Training and Technology Transfer between Academia and the Chemical and Process Industries

Region	Good practices in research & studies
Saxony-Anhalt	Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis
	Integration of Lignite as an alternative raw material into Chemical industry
North Rhine-Westphalia	Alliance pro industry and sustainability
	Chemergie
	Network Surface North Rhine-Westphalia
Usti	Strengthening the economic importance of the Palacký University in Olomouc Region
Limburg	CHEMaterials Campus
	Open Innovation
Novara	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry
	Implementation of the IBIS consortium's cooperative model, through the new device of the "network contract"
Asturias	Cross Sector Cooperation in the Chemical and Process Industries
	Good Environmental Practices
	Implementation of Safety Good Practices in Chemical and Process Industries
	Site Selection in the Chemical and Process Industries
	Training and Technology Transfer between Academia and the Chemical and Process Industries
Tees Valley	Innovation Accelerator - Support Services



3.1.4. Transferability and Innovativeness

High level of transferability		Region
Highly innovative	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry	Novara
	Alliance pro industry and sustainability	North Rhine-Westphalia
	CHEMaterials Campus	Limburg
	Children Challenging Industry Programme	Tees Valley
	Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)	Saxony-Anhalt
	Open Innovation	Limburg
Medium	Good Environmental Practices	Asturias
	Site Selection in the Chemical and Process Industries	Asturias
Less innovative	"Mazovian Innovator" Contest	Mazovia
	Innovation Accelerator - Incubation Facilities	Tees Valley
	Innovation Accelerator - Support Services	Tees Valley

Medium level of transferability		Region
Highly innovative	Centre for Process Innovation	Tees Valley
	Chemergie	North Rhine-Westphalia
	Implementation of the IBIS consortium's cooperative model, through the new device of the "network contract"	Novara
	Network Surface North Rhine-Westphalia	North Rhine-Westphalia
Medium	Development of Gold Standard Frameworks	Cheshire West & Chester
	Training and Technology Transfer between Academia and the Chemical and Process Industries	Asturias
Less innovative	Centre for Advanced Laboratory Techniques (CALT)	Usti
	Cross Sector Cooperation in the Chemical and Process Industries	Asturias
	Implementation of Safety Good Practices in Chemical and Process Industries	Asturias
	Mazovian Network of Information - Advisory Centres for Innovation	Mazovia

Lower level of transferability		Region
Highly innovative	Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis at the Dow Valuepark in Schkopau	Saxony-Anhalt
	Integration of Lignite as an alternative raw material into Chemical industry	Saxony-Anhalt
Medium	New procedures and processes of biomass gasification	Usti
Less innovative	Strengthening the economic importance of the Palacký University in Olomouc Region	Usti

3.2. Global Assessment

3.2.1. Main content of the best practices

1. Connect industry and society.

Two of the reported good practices (NRW, Tees Valley) are addressed to keep or reclaim the connection between industry and the local society. Industry is on the base of wealth and well being of modern society. However, the undesired consequences of industrial development, such as environmental damages, and the growth of service sector have deteriorated the public image of industrial activities. This also has practical consequences, such as the resistance of local communities to new industrial sites, or the difficulty to attract human capital to industrial activities. Both initiatives are trying to build a closer relationship between industry and local communities, through communication and dissemination actions to different target groups. In one case the target group are schoolchildren, in the other the communication actions are addressed to a wider audience at regional level to raise more understanding for industrial projects.

2. Increase company cooperation.

Company cooperation is a frequent instrument and objective of industrial policies. A number of the good practices collected in the ChemClust regions (NRW, Novara, Saxony-Anhalt, Asturias) are aiming at promoting business cooperation or are using cooperation as a tool to improve company competitiveness, or other policy objectives, such as a closer connection between industry and the community.

Cooperation initiatives range from loose networking to very tight cooperative research initiatives, and also include public-private partnerships and private consortia. Novara is reporting of interesting initiatives that make compatible a flexible company networking, avoiding too rigid structures, with a straightforward access to supporting funding for cooperative research.

Cooperation shows its potential for innovation in some of the initiatives reported by NRW and Saxony-Anhalt. Ambitious long term research usually requires of a mix of competences and risk-sharing, and cooperation can provide both.

Public-private partnerships are also used in NRW and Saxony-Anhalt to develop wider initiatives bringing together multiple regional actors to support them. That is the case of initiatives to connect industry and community, or to consolidate the region as a leading location for chemical industry.

3. Build or improve facilities for chemical related research: labs (Usti), R&D (NRW, Saxony-Anhalt, Tees Valley)

A good number of initiatives are focusing on the improvement of research facilities, such as university labs or R&D and technology centres. The availability of innovation support infrastructure is regarded as a pre-condition for innovation, and the investments on updating or improving that infrastructure quite often brings a boost to innovation, as the ChemClust good practices show.

Successful investments on innovation facilities are those more closely connected to the existing business structure. In some cases it has been built in cooperation with the private sector (public-private partnerships), in others it is based on existing facilities (for instance a chemical park) or in the demand of local industry. It also seems quite relevant that the investment in innovation facilities is accompanied by complementary measures to make sure that new facilities are properly and extensively used.

4. Foster innovation and business creation (Limburg, Tees Valley, Mazovie).

Through soft or hard measures ChemClust regions are paying special attention to promoting industrial innovation to improve business competitiveness. Some measures are directly intended to promote the creation of new businesses or radical innovations within traditional companies. The Limburg's Open Innovation offers promising opportunities to produce and disseminate innovation and generate new businesses. The Innovation Accelerator facilities and services in Tees Valley, as other incubators, offer the appropriate environment for companies to grow and innovate.

In other areas where innovation is not so consolidated, information, dissemination and advice services are bringing innovation opportunities closer to traditional companies and to potential entrepreneurs. Specific measures like the Innovation Contest, or other communication initiatives, can be very useful in these areas to raise the awareness of companies and other agents about innovation.

5. Improve industry competitiveness factors (Asturias, Cheshire West & Chester, Mazovie).

Improving competitiveness is the final goal of most of the reported good practice. In some cases, however, it is the immediate objective of specific measures addressed to some of the key factors determining company competitiveness, such as human resources, technology transfer, improvement of environmental management, or safety at work and hazard prevention.

6. Regional attractiveness and inward investment (Saxony-Anhalt, Limburg, Asturias).

As with company competitiveness, many of the good practices reported are intended to improve the basic conditions for regional competitiveness. Regions need to offer companies the best conditions to carry out their activity to become or keep their attractiveness as industrial locations. In fact, one of the good practices reported is a research conducted by the Asturias Chemical Cluster identifying the main factors for company location.

Measures to improve regional attractiveness as industrial location are evolving from basic infrastructure or the cost or availability of natural resources (reported to be the key traditional factors) to innovation and research facilities (Saxony-Anhalt) or even further, to create innovative environments where knowledge flows.



7. Support to R&D projects (NRW, Saxony-Anhalt, Usti)

Few of the good practices reported are concrete R&D projects promoted by company consortia or by public-private partnerships. R&D projects are usually supported by public funding, using different schemes. Some of these projects may be exploring technology breakthroughs, like in the energy sector (biomass, hydrogen) or in testing new materials (lignite as raw material for chemical industry).

3.2.2. Policy level

Good practices reported include actions taken at different policy levels. There are top-down initiatives, bottom up projects, and also horizontal industrial or business support initiatives with undefined beneficiaries. In some cases measures are implemented through intermediate bodies, such as Technology Centres or Industrial Parks.

Although the good practices reported are usually including a combination of measures, policy approaches can be sorted out as:

1. Top-down investments addressed to improve the scientific, research and technology base of the industry.

Decisions on basic infrastructure are usually taken by public authorities, eventually in consultation with the industry. Good practices reported include only a few of these investments, connected with other measures. The most relevant ones are the creation or development of Research and Technology Centres and of Industrial Parks, as in Saxony-Anhalt, Tees Valley or Usti.

2. Financial support schemes to promote innovation, business cooperation...

Financial support to company initiatives is one of the most frequent industrial policy measures. The good practices reported include different type of support models. A novel support format is reported by Novara, which connects business cooperation and tax breaks: companies involved in cooperative innovation may qualify for tax breaks to support the innovation projects. A number of the ChemClust partners also point out the need of increased support to SMEs to boost their involvement in innovation activities. Indirect financial incentives, like the innovation voucher, are also used or proposed.

3. Soft support (use of research or incubation facilities, advisory services, information networks).

Industry and business support may also be provided under the form of services. Services may range from providing basic information or advice, to very sophisticated support on research projects, or eventually the use of research facilities or equipment. Examples of good practices may be found in almost every ChemClust region. More significant ones may be the advisory centres for innovation in Mazowie, or the Innovation Accelerator and the Centre of Process Innovation in Tees Valley, but also the support provided through the more subtle initiatives in Limburg (the CHEMaterials Campus and the Open Innovation).

State aid regulations and financial constraints are turning this form support more popular, as it is made equally available to all com-

panies with a relatively limited cost. Services are often provided through intermediate bodies, such as Business Incubators, Technology Centres or Industrial Parks. Increasingly, and particularly when it involves high value-added services, soft support may be provided on commercial terms, as the providers are working on self-financing basis. Some of the service providers are partly funded by public sources or have access to funding sources to enhance their infrastructure or co-finance the services provided.

4. Bottom-up cooperative projects promoted by the industry and public-private partnerships.

Wider partnerships involving companies and research and technology centres, in some cases in cooperation with public authorities, are the source of some of the most innovative and interesting good practices. Partnerships are not only used for concrete industrial objectives (research and development projects) but also for the inception and implementation of ambitious and comprehensive initiatives.

Good practices in Saxony-Anhalt (CeChemNet), NRW (Chemergie, Network Surface), Novara (IBIS Consortium), Limburg (CHEMaterials) or Asturias (Cross Sector Cooperation) show the potential and strength of this type of partnerships, which can successfully achieve quite ambitious goals in different areas. The good practices reported show that the commitment of the companies and other actors is the key factor for achieving good results, even in areas of the highest technological demand. Partnership is also in the origin of the Cheshire Gold Standard Frameworks, which are being developed by the employers' skills council.

Partnerships are probably the right vehicle for initiatives intending to connect industry and the community, as it is shown in the NRW's Alliance pro industry and sustainability.

5. Research and innovation initiatives

Some of the good practices reported are specific research and innovation initiatives, promoted by research and technology centres or by private consortia, eventually attracting receiving public support. The projects reported refer to ambitious long term initiatives that have been presented for support. In some cases it could involve not only financial support, but also building or financing special-purpose research infrastructure.

3.2.3. Policy objectives

Good practices can be analysed by their policy objectives. Some of them are directly related to industrial objectives of the companies involved, others seek wider regional policy objectives; in many cases good practices may serve various policy objectives, and some objectives may be also instrumental to others:

1. Improve industry competitiveness.

This is the most evident objective of many of the good practices selected. Good practices are trying to influence some of the key aspects of company competitiveness: innovation capacity, human resources, environmental management.

2. Retain industrial base and avoid relocation.

A number of the good practices are trying to improve the conditions enjoyed by local industry to encourage companies to stay in the regions, offsetting some of the higher costs they may face. That is mostly done through investments to improve the basic infrastructure (industrial sites, research facilities, communications, logistic infrastructure...), but also by improving the qualifications of the human resources (Gold Standard Frameworks in Cheshire, Training actions in Asturias).

3. Increase attractiveness of the regions as chemical industry location.

Improving infrastructure and other key factors for industrial activity is increasing the “territorial capital”, and therefore makes the regions more attractive as industrial location. One of the good practices from Asturias is specifically addressed at analysing the site selection criteria in the chemical and processes industries; the conclusions of the study show that availability and cost of resources (water, energy), infrastructure, qualification of human resources, financial support and favourable business environment are the key factors companies assess when choosing a new site or enlarging industrial facilities. A number of good practices are addressing these and other issues: improving industrial sites (Saxony-Anhalt), technology centres (Saxony-Anhalt, Tees Valley, Usti), support services (Mazovie), financial incentives (Novara), human resources (Cheshire, Asturias).

4. Foster business creation.

Business creation an important policy objective in some of the good practices reported. In some cases traditional instruments as the business incubators are used (Tees Valley's Innovator Accelerator); in others, a more innovative approach is attempted: using different formats both the Limburg Open Innovation scheme and the Mazovian Innovator Contest are trying to promote the identification, analysis and dissemination of innovative business ideas that may become viable business models.

5. Increase R&D and innovation potential.

Through investments in research facilities, supporting research and innovation projects, or by other soft support, ChemClust regions are trying to increase the research and innovation activity, and also the potential for future research.

6. Connect industry and society.

A closer and better connection between industry and society helps building an appropriate environment for companies to work, and therefore encourage and facilitate them to stay in their current location. A good relationship between industry and the hosting communities also reduce conflicts and helps attracting valuable human resources, increasing industry competitiveness. Good practices like the NRW's Alliance pro industry or the Tees Valley's Children Challenging Industry Programme are good examples of these objectives.

3.2.4. Lessons learned

The good practices reported are producing different results. Most of them have achieved or are achieving its objectives (some of them are being implemented). However, together with the specific results sought, the implementation of the different schemes has revealed other challenges or opportunities for action.

1. Importance of research facilities to give a boost to innovation.

Most of the regions consider that the availability of good and updated research facilities is a prerequisite for a solid innovation activity. The good practices show that the improvement or equipment of a new research facility tends to produce an immediate increase in innovation effort by the companies, and that research activities tend to consolidate around the available facilities (Tees Valley's Centre for Process Innovation; Saxony-Anhalt's Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis; Usti's Centre for Advanced Laboratory Techniques).

2. Strong support brings fast results à innovation push.

Some of the good practices reported are large direct investments or indirect financial support to innovation projects, giving a push to bring strategic decisions into real actions. The Saxony-Anhalt's Pilot Plant for Polymer Processing and Synthesis and the Integration of Lignite project, and NRW's Chemergie project successfully attracted strong support to carry out the implementation of the projects. The implementation has already generated new opportunities for companies.

3. Innovation is still a challenge for SMEs.

Most of the regions are still finding difficulties to involve SMEs in research projects. Difficulties are in some cases caused by the financial constraints SMEs are facing; in others SMEs are lacking human resources or innovation skills. SMEs are looking for short term returns that are not evident in research activities, especially in basic research. Good practices also reflect that it has also been difficult to involve SMEs in cooperative research. The SME involvement in innovation is even more difficult in less advanced areas, and some of the good practices refer to specific programmes to encourage and support SME involvement (Mazovian Network of Information and Advisory Centres). Specific financial support schemes are also proposed or used (innovation vouchers).

4. Leadership and strong involvement of private sector and key industry leaders

There is a strong consensus across the good practices in considering that the leadership and involvement of the industry is a good instrument to achieve the objectives sought. That is evident in projects that are based on or implemented by public-private partnerships (NRW, Saxony-Anhalt), in bottom-up industry led projects (Novara, Asturias, Cheshire). Personal involvement and strong commitment of key leaders was critical to kick-off and develop some of the projects. That leadership helped to involve other companies.



5. Financial incentives are key to promote business cooperation.

The good practices aiming at promoting business cooperation or using cooperation as a tool for achieving other objectives confirm the need of offering financial incentives to involve companies in such initiatives. It seems that companies are still considering that cooperation involves additional costs or that it does not offer the return they expect. Novara's experience in the implementation of the IBIS consortium's cooperative model, through the new device of the "network contract" is a good example of the favourable effect of flexible and targeted incentives.

6. Cross fertilisation may be a good innovation driver.

Limburg's experience in the CHEMaterials Campus and in Open Innovation, Asturias Cross Sector Cooperation, NRW Alliance pro Industry, or Novara Consortium experiences are showing the potential for cross cooperation between different subsectors of the chemical industry or between chemical industry and other process industries. The cooperation between different subsectors is able to identify new opportunities for radical innovation, but also in other topics of common interest, like environmental protection, human resources (that is also the lessons out of the Cheshire Gold Standard Framework).

3.3. Future actions and possible areas for Cluster Cooperation and Transfer of Best Practices.

Most of the good practices reported are of recent implementation. Some of them are still being implemented and therefore future actions will be mostly focused on completing their implementation. In case of the number of research and innovation projects which are being developed, partners are mainly interested in finalising them and bring their results to production and to market.

For some of the actions that have already been completed, partners are suggesting the possibility of sharing them with other partners, subject to funding availability: some experiences can be transferred and implemented in other regions; innovation projects and studies can be further developed in cooperation with other partners.

1. Complete project implementation.

Partners are currently implementing a number of the good practices reported, to get the full expected results. That is the case of the cooperative networks in Novara, but also some of the innovation projects in Saxony-Anhalt and NRW, which are yet to be completed. Also the Tees Valley Innovator Accelerator will be operational very shortly.

2. Technology development: bring research results to market.

Most of the innovation projects reported as best practices still need to be fully completed. Some of them will still require important investments in research facilities and long term research: the first large-scale project for using lignite as a raw material for the chemical industry is to be established and operated by 2020, the Chemergie consortium will be developing an operational fuel cell power plant...

3. Expand initiative to other regions.

Partners are offering some of the already completed actions to be transferred to other regions. That is the case of initiatives like the Tees Valley Children Challenging Industry Programme, or the Open Innovation scheme developed in Limburg. Those are initiatives that may be easily transferable, as they do not require major investments.

4. Technology Cooperation.

In some of the innovation projects it is expected that the cooperation between companies and other technology partners will be continuing and strengthening. In many of these projects there are still technology and management challenges to be addressed and solved. That could also be extended to other partner regions.

5. European-wide studies and research.

Some of the good practices developed in the ChemClust regions might be used as a basis for joint projects to share and transfer the experiences to other partner regions. For instance, the studies reported as good practices from Asturias (Site Selection, Safety and Environmental Practices) could be extended to other areas. Human resources initiatives, as the Cheshire's Gold Standard Framework, can also be adapted to other regions.

4. Full description of the good practices.

4.1. Saxony-Anhalt

4.1.1. Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)

Title of the Practice / Experience	Development of Innovation Location Network of Central German Chemical Parks (CeChemNet)
<p>Aims and Objectives of the practice</p>	<p>Development of innovation profiles of chemical parks alongside the value added chain and networking of innovation locations.</p> <p>Promotion of innovation development on chemical parks by settlement of research infrastructure and better cooperation with regional innovation landscape.</p>
<p>Location</p> <ul style="list-style-type: none"> Country Region, District, Metropolitan Area or Municipality 	<p>Germany</p> <p>Saxony-Anhalt</p>
<p>Detailed description</p> <ul style="list-style-type: none"> Origin Timescale Agencies involved / implementation Process and detailed content of the practice Legal framework Financial framework Anticipated / intended outputs 	<p>The Chemical Parks Network CeChemNet brings together the chemical parks in Schkopau, Bitterfeld, Leuna, Schwarzheide and Zeitz. To meet the challenges of the knowledge society in terms of attracting innovative investors as well as qualified staff, the CeChemNet partners pursue the approach of chemical parks as 'knowledge sites': Every site aims for its specific setting of priorities in terms of research and development (see graph).</p>  <p>Establishing the Fraunhofer Pilot Plant Center for Polymer Synthesis and Processing and the Fraunhofer Module Technology Centre for Silicon Photovoltaics at the ValuePark in Schkopau is indicative of the effectiveness of R & D infrastructure on a chemical site. These different R & D profiles create opportunities to increasing value under the CeChemNet umbrella. This process of establishing a network of innovation sites in the Central German chemical triangle leads to a unique selling proposition in competing for investments on a global scale. With synergies owing to the feedstock integration in the Central German chemical triangle and the specific profile of each chemical site in terms of R & D the CeChemNet partners are well set for the global competition for investments. Latest developments in the innovation area are the establishment of the Fraunhofer CBP chemical biotechnological process centre and the Coal to Chemical pilot project IBI in the chemical park Leuna.</p>
<p>Evaluation</p> <ul style="list-style-type: none"> Indicators use 	<p>The innovation location network has clearly supported the settlement of PAZ in Schkopau, the CBP in Leuna. Also the coal to chemical project IBI has been initiated in this framework. Each chemical park has now developed its own innovation profile, which is important for the further development of the site.</p>
<ul style="list-style-type: none"> Actual Outputs - Success factors Difficulties encountered and resolution 	<p>The success factor of the innovation location network is the strong commitment of chemical park operators to focus innovation development on a specific area, which matches well to the value added chain of companies already present on the park.</p> <p>The cooperation of companies and chemical parks with the surrounding research organisation and universities can be improved in the future.</p>
<p>Lessons learnt</p>	<p>It is important to initiate a strategic debate about the role of innovation for the further development of chemical parks and the future acquisition strategy. The focus on a specific innovation area helps to develop a USP for chemical parks which improves their positioning in global competition.</p>
<p>Future Actions</p>	



Contact information	CeChemNet Central European Chemical Network Fiene Grieger +49 (0) 345 / 299 827 18 +49 (0) 345 / 299 827 11 fiene.grieger@cechemnet.de Hoher Weg 3 06120 Halle an der Saale www.cechemnet.de
Name Telephone Fax E-Mail Postal Address Website	
Other information · Documents (reports, presentations, etc.) · Follow on projects	Brochure on CeChemNet in English as download on website.

4.1.2. Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis

Title of the Practice / Experience	Development of Fraunhofer Pilot Plant Centre for Polymer Processing and Synthesis
Aims and Objectives of the practice	Aims and Objectives of the practice Development of research infrastructure on chemical parks Promotion of innovation development on chemical parks with special focus on SME.
Location · Country · Region, District, Metropolitan Area or Municipality	Germany Saxony-Anhalt, Saalekreis, Schkopau
Detailed description · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs	<p>The Fraunhofer Pilot Plant Centre for Polymer synthesis and processing (PAZ) has the objective to support innovation development of SME companies by providing expert knowledge, tailored services and research infrastructure in pilot scale.</p> <p>For this purpose several partners from research, industry and administration have worked together to establish the pilot plant, which has been opened in 2005.</p> <p>The main research stakeholder of the pilot plant center is the Fraunhofer institute, which has its focus on applied research. Furthermore the Merseburger Innovation and Technology Centre was an important partner, who was responsible for the extension building of the Mitz II, which is the location of the PAZ and which offers additional room for 870 sqm laboratories, factories and offices for SME of the chemical and plastics industry. The PAZ has been settled in the middle of the chemical park in Schkopau, which is owned by Dow Chemical. Dow has developed the Valuepark Concept and thus the integration of research infrastructure on the chemical park has been promoted to support companies at the location and to facilitate innovation development and research cooperation with the regional innovation landscape. The PAZ should support the further development of the polymer industry as important driver for the chemical cluster in Central Germany.</p> <p>To facilitate the networking between companies and research entities the Polykum association has been founded, which brings together polymer producers, processors, universities and other research entities, mechanical companies, service providers and other industry related entities. Further research partners are the Fraunhofer for applied polymer research IAP in Golm and the Fraunhofer Institute for Mechanics and Materials in Halle, the University of Applied Science in Merseburg and the Martin Luther University Halle-Wittenberg.</p> <p>The Pilot Plan Centre for Polymer Synthesis and Processing has been developed in a Public Private Partnership. The Dow Chemical company has provided the area on the chemical park in Schkopau as location for the PAZ. The Mitz GmbH was responsible for the building.</p> <p>The PAZ has been financed from the national funding scheme "GA" Gemeinschaftsaufgaben zur Verbesserung der regionalen Wirtschaftsstruktur - which is mainly financed by EU Funds. Mitz has spent 8.3 Million Euro (90% funded by GA/EU Funds and 10% credit by Mitz). The technical infrastructure has been financed by ERDF funds, money from the Land Saxony-Anhalt and the Federal Ministry for Research and Technology. Furthermore the Fraunhofer Institute has invested money from own programmes. 16 million Euro have been spent for the technical equipment (45% EC, 38,9% Saxony-Anhalt and 16.1 Federal Ministry for Research).</p>

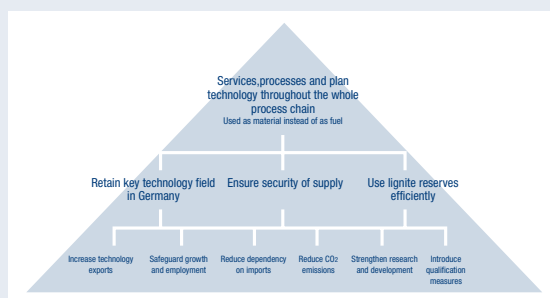
<p>Evaluation</p> <ul style="list-style-type: none"> · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution 	<p>The PAZ has developed as an important research centre for the regional chemical and plastic industry especially also the SME. But also international cooperation could be established. DSM from Limburg has used the pilot plant after initial support from ChemSME Interreg project in 2007.</p> <p>The success factor of the PAZ was the close cooperation between Fraunhofer Institutes, the Dow Chemical company and the Merseburger Innovation and Technology Centre, which have put together their forces and implemented an innovative operation and financing model.</p> <p>The access of SME to research infrastructure is strongly desired but there are only little innovative and practicable financial tools to support this process. An unbureaucratic solution for this problem is the research voucher, which gives a defined amount of money to SME, which can use it to buy research services without any application procedure. A similar voucher system is also desired in Saxony-Anhalt.</p>
Lessons learnt	The interaction of stakeholders from research, industry and the municipality is important for successful establishment of the PAZ.
Future Actions	The promotion of research services at regional and international level and the development of financial support for SME should be improved in the future.
<p>Contact information</p> <p>Name</p> <p>Telephone</p> <p>Fax</p> <p>E-Mail</p> <p>Postal Address</p> <p>Website</p>	<p>Fraunhofer-Pilotanlagenzentrum für Polymersynthese und -verarbeitung PAZ</p> <p>Prof. Dr. Michael Bartke</p> <p>+49 (0) 3461 / 25 98 - 120</p> <p>+49 (0) 3461 / 25 98 - 105</p> <p>michael.bartke@iap.fraunhofer.de</p> <p>ValuePark A74</p> <p>06258 Schkopau</p> <p>www.polymer-pilotplants.com</p>
<p>Other information</p> <ul style="list-style-type: none"> · Documents (reports, presentations, etc.) · Follow on projects 	

4.1.3. Integration of Lignite as an alternative raw material into Chemical industry

Title of the Practice / Experience	Integration of Lignite as an alternative raw material into Chemical industry (IBI - Innovative Braunkohlen Integration in Mitteldeutschland)
Aims and Objectives of the practice	Development of new technologies, systems and processes for the use of lignite as alternative raw material in the chemical industry and its integration on industrial scale.
<p>Location</p> <ul style="list-style-type: none"> · Country · Region, District, Metropolitan Area or Municipality 	<p>Germany</p> <p>Saxony-Anhalt and Saxony</p>
<p>Detailed description</p> <ul style="list-style-type: none"> · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework 	<p>Initiated in 2008 an alliance developed a concept on how to integrate lignite with the chemical industry and develop new technologies needed for that purpose. The concept was presented to the Federal Ministry of Education and Research (BMBF), which in mid-2010 decided to allocate about 14 millions of Euros to support this project.</p> <p>12 partners: 10 from the business sector as well as 2 universities.</p> <p>The alliance aims at obtaining chemical raw materials from lignite, whereby the greatest focus is on using the chemical compounds that are already present in the coal. To achieve the maximum value added processes from coal deposits through production and on to refining are to be developed in an integrated chain.</p> <p>Deposits > Mining > Processing > Extraction > Catalytic Cracking > Gasification</p> <p>Funded by the Federal Ministry of Education and Research (BMBF) (about 14 million €) and co-financing by the alliance (about 7 million €).</p>



<ul style="list-style-type: none"> · Anticipated / intended outputs 	<p>Through the use of existing structures the local economy is supported. The high degree of integration reduces the emission of greenhouse gases because of the minimum expenditure on energy. Thus the use of lignite as chemical raw material is cost-effective.</p> <p>Increase of the contribution to the value added chain by using local lignite.</p> <p>Raising the chemical industry's security of supply.</p> <p>Strengthening the position of local engineering companies on global market through innovations.</p>
Evaluation <ul style="list-style-type: none"> · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution 	
Lessons learnt	
Future Actions	<p>Attuning individual modules in the process chain to the interaction between the chemical and plant parameters so that the developed solution can be adapted to any number of clients operating under differing conditions.</p> <p>Developing and marketing process technology, plant system and service components.</p> <p>The first large-scale project for using lignite as a raw material for the chemical industry is to be established and operated in Leuna by 2020.</p> <p>Source: IBI - From Mining to Refining - Innovative Process Technology, www.ibi-wachstums kern.de</p>
Contact information <p>Telephone</p> <p>E-Mail</p> <p>Postal Address</p> <p>Website</p>	<p>IHU Gesellschaft für Ingenieur-, Hydro- und Umweltgeologie mbH</p> <p>Niederlassung Halle/Merseburg (Coordination of IBI Activities)</p> <p>+49 (0) 345 - 5 20 88-0</p> <p>ibi@ihu-gmbh.com</p> <p>Passendorfer Weg 1</p> <p>D - 06128 Halle/Saale</p> <p>ihu-gmbh.com</p> <p>www.ibi-wachstums kern.de</p>
Other information <ul style="list-style-type: none"> · Documents (reports, presentations, etc.) · Follow on projects 	<p>Folder on IBI in English available for download in section "Aktuelles".</p>



4.2. North Rhine-Westphalia

4.2.1. Chemergie

Title of the Practice / Experience	Chemergie
Aims and Objectives of the practice	Reorientation of the traditional industrial park Hürth-Knapsack to develop an experiential research and production environment for interface competence between chemistry and energy in combination with the development of a regional center of excellence.
Location <ul style="list-style-type: none"> · Country · Region, District, Metropolitan Area or Municipality 	<p>Germany</p> <p>North Rhine-Westphalia, Cologne</p>

<p>Detailed description</p> <ul style="list-style-type: none"> · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs 	<p>In 2007 chemergie was qualified within a regional funding competition program "Regionale 2010". 2007-2012.</p> <p>7 project partners: 1 academy "Rhein-Erft-Academy", 1 regional hydrogen association, 1 energy company "RWE Power", 1 industrial service provider, 1 district and 1 municipal public institution, "Regionale 2010" headquarter.</p> <p>Transferring the industrial park towards improvement of regional competitiveness and employability.</p> <p>Knowledge, application and knowhow transfer (R&D pilot project, tests and evaluation).</p> <p>Exchange and information platform (special events e.g. congresses, trade shows and forums; open houses/technologies).</p> <p>Education and training.</p> <p>Representation / economy (more transparency towards the public, presentation of local and regional companies).</p> <p>Public Private Partnership.</p> <p>Funded by "Regionale 2010" (ERDF and State of North Rhine-Westphalia).</p> <p>Further pilot projects in interface competence areas chemistry and energy, e.g. fuel cell power plant.</p> <p>Further development of the Rhein-Erft-Academy into a nationwide meaningful university of applied sciences.</p> <p>Sustainable establishment of nationwide important transfer events in the field of chemistry and energy, e.g. regional "Chemergie" trade shows.</p>
<p>Evaluation</p> <ul style="list-style-type: none"> · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution 	<p>Rhein-Erft-Academy as key function of center of excellence.</p> <p>Hydrogen filling stations + information center as symbol of hydrogen cluster.</p> <p>2 fuel cell hybrid buses provided by hydrogen produced in Knapsack for everyday operation (e.g. Hürth city transport network).</p>
Lessons learnt	
Future Actions	Fuel cell power plant to generate electricity and heat (Cogeneration CHP).
<p>Contact information</p> <p>Name</p> <p>Telephone</p> <p>E-Mail</p> <p>Postal Address</p> <p>Website</p>	<p>Wolfgang Wackerl, Project manager</p> <p>"Regionale 2010" Agency</p> <p>0049 (0)221 9254 7742</p> <p>wackerl@regionale2010.de</p> <p>Ottoplatz 1</p> <p>D - 50679 Köln</p> <p>www.regionale2010.de</p>
<p>Other information</p> <ul style="list-style-type: none"> · Documents (reports, presentations, etc.) · Follow on projects 	

4.2.2. Alliance pro industry and sustainability

Title of the Practice / Experience	Alliance pro industry and sustainability (Allianz pro Industrie und Nachhaltigkeit)
Aims and Objectives of the practice	In public perception, industrial progress and sustainable development should not be regarded as opposites, but as mutually dependent. To communicate this more effectively to the public and thereby raise more understanding for industrial projects is the aim of the practice. It shall be reached by local and regional activities in North Rhine-Westphalia.



Location <ul style="list-style-type: none">· Country· Region, District, Metropolitan Area or Municipality	Germany North Rhine-Westphalia
Detailed description <ul style="list-style-type: none">· Origin· Timescale· Agencies involved / implementation· Process and detailed content of the practice· Legal framework· Financial framework· Anticipated / intended outputs	<p>“NRW Alliance Pro industry and sustainability” was founded in June 2009. The actors have signed the “Düsseldorf Declaration”, which is also strongly supported by the chemical industry of NRW.</p> <p>Founded in 2009.</p> <p>Companies, associations, chambers of commerce, labor unions and regional government.</p> <p>All partners with their different activities and specific resources should play a part in the realization of the objectives of the alliance.</p> <p>In the Ministry for Economic Affairs, Energy, Building, Housing and Transport of NRW, a coordination office has been set up as agency to coordinate the steering committee and to provide informational & consulting services.</p> <p>Communicating the latest news about innovations of NRW’s industrial companies via the “Industrieticker” (industry ticker).</p> <p>Reporting activities of local and regional developments.</p> <p>Ongoing exchanges of the participants about industry and sustainability.</p> <p>Support services of the agency for the establishment of regional and local (sub)-alliances:</p> <p>Strategy workshop: definition of common goals, measures for the implementation of the 3 stages – attention, benefits, attitude.</p> <p>Kick-off event: support the organization of the event; target is creating an alliance in involvement and cooperation with all actors; documentation and evaluation of the event; development of a guidance framework</p> <p>Information: The agency offers to present its support services to local groups of associations, chambers and other interested organizations.</p> <p>Public Private Partnership.</p> <p>Funded by the Ministry for Economic Affairs, Energy, Building, Housing and Transport of the State of NRW with occasional support by the members of the alliance pro industry and sustainability.</p> <p>Enlightening the population about the environmental and economic opportunities of the industrial structures in NRW by means of a wide ranging social discourse.</p> <p>Providing information about the Alliance including their support services via workshops.</p> <p>Increasing the number of regional / local alliances for more popular acceptance of the industries.</p> <p>More dialogue with more actors, e.g. with environmental associations, civil society activists.</p>
Evaluation <ul style="list-style-type: none">· Indicators used· Actual Outputs - Success factors· Difficulties encountered and resolution	<p>Huge amount of positive feedback as indicator.</p> <p>Formation of the regional alliances Düsseldorf (February 2010) and local alliance Dormagen (November 2010).</p> <p>Day of Industry in chemical parks (Chempark Leverkusen & Chempark Dormagen) in 2010 let the citizens see behind the curtain for filling their knowledge gap about the innovation and production processes and environmental actions of chemical companies.</p> <p>The Congress “Pro Industry and Sustainability” in June 2009 informed about the industrial location and position in the State NRW for all actors and citizens.</p> <p>Using tourist information signs along federal highways for the industry location will result in more attention for supra-regional industrial sectors and infrastructures.</p> <p>Coordination of all actors.</p>
Lessons learnt	Adequate financing is essential for funded projects.
Future Actions	<p>Sustainability ratings of innovative industrial products.</p> <ul style="list-style-type: none">> Description of products concerning their active part to reduce emissions.> The collected data will be published on the homepage (optionally a printed version).> Aim is to sensitize people to the necessity of the industry for a dynamic development of sustainability. <p>Conference on dialogue oriented industrial and economic policy in spring 2011.</p> <p>Drafting a guideline how to establish local alliances pro industry and sustainability on the basis of gained experiences.</p>

Contact information	Management Office Allianz pro Industrie und Nachhaltigkeit c/o Ministry for Economic Affairs, Energy, Building, Housing and Transport of the State of NRW
Name	Hans-Jürgen Müller, Simon Dames, Director of Management Office Communication
Telephone	0049 (0)211 - 837 2358 0049 (0)211 - 837 2395
E-Mail	hans-juergen.mueller@mwebwv.nrw.de Dames@iku-gmbh.de
Postal Address	Haroldstraße 4, D - 40123 Düsseldorf http://www.allianz-pro-industrie.nrw.de/index.php
Other information · Documents (reports, presentations, etc.) · Follow on projects	Monthly industrial online news about the variety of innovative techniques, highly efficient plants and global high-demand products in NRW: http://www.allianz-pro-industrie.nrw.de/Industrieticker/Industrieticker_Download/index.php

4.2.3. Network Surface North Rhine-Westphalia

Title of the Practice / Experience	Network Surface North Rhine-Westphalia (Netzwerk Oberfläche NRW)
Aims and Objectives of the practice	It connects companies, universities and research centres along the value added chain in the field of surface for: Consolidation of innovative ability. Consolidation of competitive ability.
Location · Country · Region, District, Metropolitan Area or Municipality	Germany North Rhine-Westphalia
Detailed description · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs	Winner project of funding competition Chek.NRW: network project of 3 regional projects WiN Emscher-Lippe GmbH, Technologieförderung (technology promotion) Münster GmbH and Deutsche Forschungsgesellschaft für Oberflächenbehandlung e.V. (German Research Association for surface treatment). 27.09.2010 - 30.06.2012. 43 network partners. Promotion of innovation in 4 subject areas: Efficient processes. Knowledge-based quality improvement. Multifunctional surfaces. New surface characteristic. Participation of network partners at workshops and seminars for new and/or existing project ideas. Network of business contacts for potential cooperation partners. Public Private Partnership. Funded by the State of North Rhine-Westphalia, the European Regional Development Fund (ERDF) and own financial contributions of the 3 sponsoring organizations. Funding competitions, projects and other events to improve surface technology as a strong industry in the German state NRW. Accelerating the transfer of knowledge and technology in the market. Regional information events about current and industry specific topics.
Evaluation · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution	Final report will be presented by NRW.Bank (supervision authority) at the end of the funding period.



Lessons learnt	Not available yet.		
Future Actions	To become an independent organization as an aim.		
Contact information			
Name	Dr. Marco Bastian	Martin Gründkemeyer	Dr. Hans-Joachim Streitberger
Telephone	0049 (0)2366 1098 - 31	0049 (0)251 980-1125	0049 (0)2501 25331
E-Mail	info@emscher-lippe.de	info@technologiefoerderung-muenster.de	service@dfo-online.de
Postal Address	Herner Straße 10	Mendelstraße 11	Europadam 2-6
	45699 Herten	D-48149 Münster	41460 Neuss
Website	www.emscher-lippe.de	www.technologiefoerderung-muenster.de	www.dfo-online.de www.oberflaeche-nrw.de
Other information			
· Documents (reports, presentations, etc.)	Presentation: Why surface network in NRW?, http://www.oberflaeche-nrw.de/uploads/media/kurzpr%C3%A4s.stb.03.2010.pdf		
· Follow on projects	Euregio Promotion: Project network of German and Dutch companies for functional surfaces (Interreg IV c) http://www.oberflaeche-nrw.de/uploads/media/Timmermann-Kompetenzcluster_Funktionale_Oberfl%C3%A4chen_01.pdf		

4.3. Province of Novara

4.3.1. Implementation of the IBIS consortium's cooperative model, through the new device of the "network contract"

Title of the Practice / Experience	Implementation of the IBIS consortium's cooperative model, through the new device of the "network contract"
Aims and Objectives of the practice	<p>The network contract is a new instrument of support for the creation of companies' networks. It's aimed to give financial support, under the shape of tax reduction, to companies willing to collaborate and set up a network that could be formalized through a special contract.</p> <p>The network contract allows companies to cooperate among many sectors of their activities, to share information or to create industrial services, as commercial, technical and technological activities, or to practice it in many common interest activities. IBIS consortium, with the support of some technical structures, had the opportunity to analyse the main features of this tool, especially after the recent notification of the Commission, dated 2011/01/26 C (2010) 8939 def (State Aid N. 343/2010).</p> <p>The use of the new tool called "network contract" for the implementation of the cooperative pattern of the IBIS consortium, among the stakeholders of the consortium and with external companies as well.</p>
Location	Italy Piedmont
Detailed description	<p>State regulation</p> <p>28.04.2009 - today</p> <p>27 bodies (23 chemical companies, 1 public administration, 3 universities)</p> <p>Frankly speaking, it's not so incorrect to state that we are talking about an evolution of a transaction model much older and famous: the so called "common purpose contract".</p> <p>This is not about a contract of association but it's something much easier and "lighter". With the contract of association a new body is created, a new subject indeed; the network contract, as a matter of fact, provides a suitable tool to clarify agreements between companies that want to network without excluding their subjectivity and without the necessity to set up a new entity.</p> <p>Article 42 of the law n. 122, dated July 30th 2010, former Decree converted to law n. 78, May 31st 2010.</p> <p>The budget (national one) of the measure amounts to 48 millions Euro (20 millions Euro for the 2011, 14.000.000 Euro for the 2012 and 14 millions Euro for the 2013). The length of the measure is from July 31st 2010 to December 31st 2013.</p>
· Origin	
· Timescale	
· Agencies involved / implementation	
· Process and detailed content of the practice	
· Legal framework	
· Financial framework	
· Anticipated / intended outputs	

<p>Evaluation</p> <ul style="list-style-type: none"> Indicators used Actual Outputs - Success factors Difficulties encountered and resolution 	<p>Presently, it has been an analytical work on the device, while waiting the notification of the Commission, that has been approved the 2011/01/26</p> <p>The success factors depend on the fact that could be put aside for the network up to 1.000.000 € for each company. The tax deferral it's directly managed by the Italian tax authorities (Agenzia delle Entrate).</p> <p>The tax administration doesn't have any influence on the implementation of the measure, it means that when the companies follow the requirements of the article 42 of the Law n. 122 of the July 30th 2010, the tax could be automatically deferred for its eligible part.</p> <p>The difficulties encountered refer to a first attempt at national level that was carried out with the Law 266/2005 which was a discipline that pointed to the physical model of districts or regional areas enough defined, easily identifiable as hosting areas for companies and enterprises.</p>
Lessons learnt	The network contract represents an advanced and modern tool to follow the evolution of the industrial district's pattern towards more open and flexible mechanisms for cooperation with enterprises.
Future Actions	
<p>Contact information</p> <p>Name</p> <p>Telephone</p> <p>E-Mail</p> <p>Postal Address</p>	<p>IBIS Consortium</p> <p>Giovanni Rossitti</p> <p>+39 0321 674687</p> <p>giovannirossitti@ain.novara.it</p> <p>Corso Felice Cavallotti, 25</p> <p>28100 Novara IT</p> <p>Franco Pellacini</p> <p>+39 0321 693617</p> <p>fpellacini@isagroricerca.it</p>
<p>Other information</p> <ul style="list-style-type: none"> Documents (reports, presentations, etc.) Follow on projects 	<p>Companies of IBIS Consortium.</p> <p>Associazione industriali di Novara.</p>

4.3.2. A model of a new governance in the framework of the innovative bio-based and sustainable chemistry

Title of the Practice / Experience	A model of a new governance in the framework of the innovative bio-based and sustainable chemistry
Aims and Objectives of the practice	<p>To avoid possible relocations of Piedmont companies operating in the field of the innovative and bio-based and sustainable chemistry.</p> <p>Piedmont has a strong chemical vocation and chemistry is an important pillar for its economy: the challenge of our millennium for innovation is both research and development of models capable of retaining the world's resources while preserving and enhancing the quality of life of its inhabitants, through the environmental sustainability and the cooperation of various Stakeholders.</p> <p>To avoid possible relocations, Piedmont Region has detected the "Polo di Innovazione per la Chimica Sostenibile" (Centre of Innovation for the Sustainable Chemistry), creating a light and open structure for managing its actions (IBIS Consortium).</p> <p>The objectives are:</p> <p>To promote projects of research in the field of the innovative bio-based and sustainable chemistry.</p> <p>To help the private companies (in particular the SMEs) in the execution of the projects above mentioned.</p> <p>To promote the cooperation among private companies, public administration and universities in the framework of the innovative bio-based and sustainable chemistry.</p>
<p>Location</p> <ul style="list-style-type: none"> Country Region, District, Metropolitan Area or Municipality 	<p>Italy</p> <p>Piedmont</p>
<p>Detailed description</p> <ul style="list-style-type: none"> Origin 	Focused on specific topics, the Poli di Innovazione (Centers of Innovation) are composed of groups of companies and research organizations and are managed by a dedicated entity.



<ul style="list-style-type: none"> · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs 	<p>These Centers are tools of synergistic coordination between different Actors involved in the innovation process: their aim is to make available facilities and services with high added value, to interpret the technology needs of businesses, to guide regional action in support of research and innovation.</p> <p>IBIS Consortium was born for managing the “Sustainable Chemistry” innovation cluster. It’s a light and open structure that adopts a model of dialogue (among the Stakeholders and the external environment) based on an interactive and mutual system of adaptation to the external factors.</p> <p>28-04-2009 - today.</p> <p>27 bodies (23 chemical companies, 1 public administration, 3 universities).</p> <p>Throughout periodical meetings among the representatives of the organisations that compose it, IBIS decides what are the fields of research interesting inside the Centre of Innovation. On the base of their needs and competencies/know how, each member collaborate for the drawing and the presentation of innovative bio-based and sustainable chemistry projects. The results are property of the partnership.</p> <p>Regional Operative Program for the Piedmont Region - POR FESR 2007-2013.</p> <p>Regional funds and private contributions.</p>
<p>Evaluation</p> <ul style="list-style-type: none"> · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution 	<p>25 projects elaborated in the field of the innovative research (May 2009); 4 integrated projects approved (December 2009) for a total budget of 7.2 million of Euros, of which 3,5 million of Euros co-financed by Piedmont Region.</p> <p>The cooperation among companies often in competition on the same market, has produced some innovative approaches that have been largely co-financed by the Regional Public Authorities (the 100% of the presented proposals have obtained a co-financing of about 50% of their total budget).</p> <p>Sometimes it’s difficult to involve the Stakeholders because of their “structure” that makes difficult to include them into a Consortium (i.e. for the Italian Universities is not always simple the association with other bodies).</p> <p>As regards the SMEs, they have problems to get involved in more than one project per time, above all on the financial side. This can reduce their possibility to be up-to-dated about the innovations.</p>
<p>Lessons learnt</p>	<p>A light and open structure of management (no properties or own research organisations) permit to the Centre of Innovation to be flexible with reference to the challenges of the market. Piedmont chemical companies, and in particular the SMEs, are supported in the adoption of social, economical, environmental sustainable principles that provide incentives for their innovative processes.</p>
<p>Future Actions</p>	
<p>Contact information</p> <p>Name</p> <p>Telephone</p> <p>E-Mail</p> <p>Postal Address</p>	<p>IBIS Consortium</p> <p>Olivetta Federici</p> <p>+39 0321 674687</p> <p>economico@ain.novara.it</p> <p>Corso Felice Cavallotti, 25</p> <p>28100 Novara IT</p> <p>Franco Pellacini</p> <p>+39 0321 693617</p> <p>fpellacini@isagroricerca.it</p>
<p>Other information</p> <ul style="list-style-type: none"> · Documents (reports, presentations, etc.) · Follow on projects 	<p>Companies of IBIS Consortium</p> <p>AGRINEWTECH S.R.L. (ANT), TORINO</p> <p>BRACCO IMAGING S.P.A., COLLERETTO GIACOSA (TO)</p> <p>CAGE CHEMICALS S.R.L., TORINO</p> <p>CHEMTEX ITALIA S.R.L., TORTONA (AL)</p> <p>F.A.R. FABBRICA ADESIVI E RESINE S.P.A., TORTONA (AL)</p> <p>FN NUOVE TECNOLOGIE E SERVIZI AVANZATI S.P.A., BOSCO MARENGO (AL)</p> <p>GARBO S.R.L., NOVARA</p> <p>GEOL S.A.S. DI CIBRARIO OTTAVIO & C., VERCELLI</p> <p>IRIS VERNICI S.R.L., BASALUZZO (AL)</p> <p>ISAGRO RICERCA S.R.L., NOVARA</p> <p>MEMC ELECTRONIC MATERIALS S.P.A., NOVARA</p> <p>MYBATEC S.R.L., NOVARA</p> <p>NO.EL. S.R.L., SAN PIETRO MOSEZZO (NO)</p> <p>NOVAMONT S.P.A., NOVARA</p> <p>PO.INTER. S.R.L., TORINO</p> <p>POLURESIN S.R.L., ALESSANDRIA</p> <p>PROCOAT - CONSORZIO PER LA PROMOZIONE DEI PRODOTTI VERNICIANTI RICOPIRENTI, ALESSANDRIA</p> <p>PRODOTTI CHIMICI E ALIMENTARI S.P.A., BASALUZZO (AL)</p> <p>PROGE FARM S.R.L., NOVARA</p> <p>PROVINCIA DI NOVARA, NOVARA</p> <p>RADICI CHIMICA S.P.A., NOVARA</p> <p>RESCOM S.R.L., SETTIMO TORINESE (TO)</p> <p>SESTRIERE VERNICI S.R.L., NICHELINO (TO)</p> <p>SIRCOLOR S.A.S., LA MORRA (CN)</p> <p>UNIVERSITA' DEGLI STUDI DI TORINO - CENTRO DI COMPETENZA PER L'INNOVAZIONE IN CAMPO AGROAMBIENTALE (AGROINNOVA), GRUGLIASCO (TO)</p> <p>UNIVERSITA' DEL PIEMONTE ORIENTALE "A. AVOGADRO" (DISCAFF), COLLERETTO GIACOSA (TO)</p> <p>POLITECNICO DI TORINO, TORINO</p>

4.4. Mazovia

4.4.1. “Mazovian Innovator” Contest

Title of the Practice / Experience	“Mazovian Innovator” Contest
Aims and Objectives of the practice	Promotion of pro-innovation attitude in Mazovia Region, in academic circles and SME's environment in particular.
Location <ul style="list-style-type: none"> · Country · Region, District, Metropolitan Area or Municipality 	Poland Mazovia Voivodeship
Detailed description <ul style="list-style-type: none"> · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs 	<p>The Mazovian Innovator Contest is an important action of implementation of Regional Innovation Strategy for Mazovia Region 2007 – 2015</p> <p>One edition per year. Third edition is currently being.</p> <p>Originator of the contest is Innovation Section of Department of Strategy and Regional Development, Office of the Marshal of the Mazovia Voivodeship.</p> <p>Contest categories:</p> <p>Young innovative companies.</p> <p>Innovative SMEs from Mazovia region, which offer new products or services applying advanced methods of technology, organization or marketing in everyday business activity.</p> <p>Innovative Young Researcher.</p> <p>Creative thinking authors of the best research which resulted in innovative PhD thesis.</p> <p>Cost of organizing the competition - third edition (awards, experts, etc) - 23 000 euro (Region's own resources).</p> <p>The Mazovian Innovator Contest is being sponsored by Marshal of the Mazovia Voivodeship.</p> <p>The wide range of new products and services presented every year vows and benefits the business and academia society in mutual link.</p>
Evaluation <ul style="list-style-type: none"> · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution 	<p>Participation in the competition helps in the efforts to obtain financial support from various institutions for example: “Patent Plus”, program of Ministry of Science and Higher Education.</p> <p>Contest was singled out as good practice by the Polish Agency for Enterprise Development in its competition “Leaders of the implementation of Regional Innovation Strategies”.</p>
Lessons learnt	Implementation of the contest in the past years resulted in enterprises reach to innovative technologies and scientists propulsion for innovative PhD thesis presentations.
Future Actions	Organisation of the next editions.
Contact information <ul style="list-style-type: none"> Telephone E-Mail Postal Address Website 	(22) 511 74 11 l.gorecki@mazovia.pl Urząd Marszałkowski Województwa Mazowieckiego w Warszawie Departament Strategii i Rozwoju Regionalnego AI. Solidarności 61 03-402 Warszawa www.innowacyjni.mazovia.pl



Other information

- Documents (reports, presentations, etc.)
- Follow on projects

Newspaper article from "Polish Market" Economic Magazine nr 3 (164) 2010 - Annex C.

4.4.2. Mazovian Network of Information - Advisory Centres for Innovation

Title of the Practice / Experience	Mazovian Network of Information - Advisory Centres for Innovation (pilot project, first stage - building a network)
Aims and Objectives of the practice	The objective of the project is to develop regional Information – Advisory Centres in scope of innovation. The main goal of Centres will be consultancy and support in scope of creating and management of innovative company.
Location <ul style="list-style-type: none"> · Country · Region, District, Metropolitan Area or Municipality 	Poland Mazovia Voivodeship Central Information - Advisory Centre for Innovation, Warsaw Regional Information - Advisory Centre for Innovation, located in: Plock, Radom, Ciechanow, Siedlce, Ostroleka
Detailed description <ul style="list-style-type: none"> · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs 	Building Mazovian Network of Information and Advice Centres for Innovation is a part of implementation of Regional Innovation Strategy for Mazovia Region 2007 - 2015. Pilot project, first stage: December 2009 - March 2011. Content of the practice: <ul style="list-style-type: none"> - Providing Advisory-information services; - Business partners associating; - Support for local business; - Monitoring of changes occurring in sub-region; - Data acquisition, management of database related to innovations; - Cooperation with organisations and organisations networks in subregions Budget for first stage: approx. 250 000 euro (85% ESF, 7.5% operating program "human capital", 7.5% Region's own resources). Intended Outputs: <ul style="list-style-type: none"> - Integration of communities working to improve the level of innovation in the Voivodeship; - Raising the awareness of entrepreneurs in business management; - Establish cooperation with local businesses, local government units, academic institutions, business institutions; The pilot project will end in March 2011 and the second phase will be launched.
Evaluation <ul style="list-style-type: none"> · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution 	Project under implementation.
Lessons learnt	According to research low awareness of the benefits of innovation to the enterprise, and little interest in innovative solutions, services, products characterized mainly micro and small companies (up to 49 employees). Therefore micro and small entrepreneurs need more support in terms of information about the needs and benefits of taking pro-innovation actions; The most desirable form of support information is a platform of knowledge about the innovation available to all operators. Platform of knowledge about innovation should include: Base of activities and initiatives undertaken by operators focused on an innovative economy, innovative resource database from various industries, which will collect innovative solutions from around the world. Information on how to obtain funding to carry out its own product.

Future Actions	<p>Second stage:</p> <p>Support the creation and development of networking and information exchange between scientists and entrepreneurs in innovation and technology transfer at regional and local level, in particular by:</p> <ul style="list-style-type: none"> - Campaigns and events aimed at bringing together the partners and the promotion of knowledge transfer and innovation. - Development of communication and information exchange. <p>Timescale: 04.2011 - 06.2013.</p> <p>Budget: approx. 3 mln euro (85% ESF, 7.5% operating program "human capital", 7.5% Region's own resources).</p>
<p>Contact information</p> <p>Name</p> <p>Telephone</p> <p>E-Mail</p> <p>Postal Address</p> <p>Website</p>	<p>Marcin Postawka</p> <p>+48 22 597 97 97</p> <p>m.postawka@mazovia.pl</p> <p>Office of the Marshal of the Mazovia Voivodeship in Warsaw</p> <p>Al. Solidarnosci 61</p> <p>03-402 Warszawa</p> <p>www.innowacyjni.mazovia.pl</p>
<p>Other information</p> <ul style="list-style-type: none"> · Documents (reports, presentations, etc.) · Follow on projects 	

4.5. Tees Valley

4.5.1. Children Challenging Industry Programme

Title of the Practice / Experience	Children Challenging Industry Programme
Aims and Objectives of the practice	<p>CCI (Children Challenging Industry) aims to:</p> <ul style="list-style-type: none"> • Improve primary and school childrens' and teachers' perceptions and understanding of industry and its relationship with science. • Provide training for primary teachers to use industrial contexts and storylines for the teaching of science with particular emphasis on Scientific Enquiry. • Inspire greater aspirations in pupils leading to a desire to pursue a career in science. • Provide training for science based company personnel on offering effective site visits and speakers for primary school children. • Improved the reputation of the chemical industry and create an improved understanding of their role in society through better informed pupils and teachers. • Furnish employees in industry with a greater awareness of the education system, local schools and the level of knowledge and science skills that pupils possess at a given age. • Develop enhanced communication skills for young employees within the chemical and manufacturing sector.
<p>Location</p> <ul style="list-style-type: none"> · Country · Region, District, Metropolitan Area or Municipality 	<p>UK</p> <p>Three discrete sub-regions of Northern England where there is a high incidence of industrial activity - North West, North East and Yorkshire and Humber.</p>
<p>Detailed description</p> <ul style="list-style-type: none"> · Origin · Timescale 	<p>The programme was developed as a response to the poor perception of the chemical industry by school children and the community as a whole.</p> <p>It was initially piloted in 5 schools in 1996 and has since been rolled out across the north of England providing interventions in over 1500 schools.</p>



<ul style="list-style-type: none">· Agencies involved / implementation· Process and detailed content of the practice	<p>CIEC are part of the Department of Chemistry at the University of York and they employ and support an advisory teacher for each sub-region. Support is provided by industry, associations of industry sectors and industry clusters. Government funded agencies focusing on regional development and the growth of industry also support the programme. Links have been developed with clusters of schools through local authorities and secondary schools.</p> <p>The remit of the advisory teacher is to recruit and train companies and their staff to work with children on site and also to become ambassadors working in schools. 40-50 schools in each sub-region can be involved each year.</p> <p>The programme includes class lessons, staff development, teaching resources and linking primary schools with local industry over typically a four week period. The classroom sessions emphasise a practical problem solving approach to science in which the children work collaboratively in teams on industrial problems.</p> <p>The classroom sessions are supported by an ambassador or followed by a visit to local industry where they are amazed to see familiar science in the real world. The preferred model is for the children to visit the site to see the scale of the operation and have an introduction to the close links between scientific concepts explored in the classroom and what happens on site. Around 20-30 companies will provide site visits for these schools.</p> <p>Access to extensive teaching resources and professional support and training materials are provided for all schools that have participated on the associated web site www.psep.org</p>
<ul style="list-style-type: none">· Legal framework· Financial framework· Anticipated / intended outputs	<p>The companies involved are responsible for the risk assessment and insurance to cover all site visits. CIEC ensure that the risk assessments are in place and will advise from the benefit of experience. All adults involved in close contact with children will undergo Criminal Records Bureau (CRB) checks.</p> <p>The schools are charged a fraction of the cost of running the programme which is subsidised by in-kind support and donations from industry (individual companies, groups and associations).</p> <p>Funding has also been provided by public funds that have been directed towards the improved economic and industrial status of the region.</p> <p>Two to three half days of enquiry based activities within an industrial context for 1000 children, per year, per sub-region.</p> <p>Primary teaching staff that are more aware of the role of science in future opportunities for the children they teach.</p> <p>Company staff with an awareness of the education process and the level of understanding of young children.</p> <p>Raised aspiration in young people to engage with science based subjects.</p> <p>A network of companies and ambassadors with appropriate strategies for engaging with schools going forward.</p> <p>By working with schools companies gain a better understanding of how industry is initially perceived by teachers and pupils, and possibly a reflection of the community as a whole.</p>
<p>Evaluation</p> <ul style="list-style-type: none">· Indicators used· Actual Outputs - Success factors	<p>Evaluation and research has proven the long-lasting impact on school children and their pupils.</p> <p>Since the programme received the first regional funding in 2000, over 1,500 schools have participated resulting in upward of 40,000 children having a positive experience that showcases science as a useful contributor to society and the economy.</p> <p>Impact has been measured through the collection of drawings and response to questions about perception of industry and the people that work there. A significant number of children indicated that the experience provided them with new knowledge about science and/or industry and many expressed further interest.</p> <p>The research reports relating to this are available through the CIEC website.</p> <p>There is evidence that many of the teachers involved continue to use the resources and teaching techniques to support their science teaching and value the opportunity to learn more about the links with industry.</p>
<ul style="list-style-type: none">· Difficulties encountered and resolution	<p>The programme has focussed on regions that have a concentration of industrial sites. This is to increase the opportunity for site visits. In some regions it has been difficult to engage suitable companies that can provide visits. There is also an issue about how far children may have to travel. The introduction of ambassador training to provide scientists and engineers willing to visit schools has helped to alleviate this to some extent but distance from site is still a factor.</p>
Lessons learnt	<p>Schools, although enthusiastic in their feedback post intervention, are not easy to motivate initially to participate. This has been identified as a result of the status of science on within the curriculum and the allocation of time to the subject.</p> <p>Time for contacting industry, arranging visits and the general administration required do not have a high priority. This can result in the classroom element (science practices) taking place but the industry visit being delayed.</p> <p>Practical help with the organisation of the visits has been highly valued by the schools and provides industry with a sense of continuity in that they have a regular contact.</p>

Future Actions	<p>Long term sustainability is intended through creating capacity to extend the relationships between companies and their local communities. Partnerships between secondary schools working directly with their primary feeder schools to build sustainable relationships and ensure continued interaction are being encouraged.</p> <p>The introduction of the programme into new regions will take place if funding can be made available. A number of optional approaches through training programmes that will reach a higher number of teachers, but not provide direct input for children, have been developed and employed with remote groups of teachers and some local authorities.</p> <p>The number of teaching resources available to provide ideas for teaching contexts and ways to illustrate links to industry is continuing to increase. The development of these resources involves teachers and industry partners to ensure that the links to the teaching curriculum are sound and the links to industry accurate. Funding for the development of the resources, some web based and some available as printed copy, is provided by industry.</p>
Contact information Name Telephone E-Mail Postal Address Website	01904 322523 ciec@york.ac.uk CIEC Promoting Science University of York Heslington YORK YO10 5DD www.ciec.org.uk
Other information · Documents (reports, presentations, etc.) · Follow on projects	Research summaries on www.cciproject.org/research.htm

4.5.2. Innovation Accelerator - Incubation Facilities

Title of the Practice / Experience	Innovation Accelerator
Aims and Objectives of the practice	Provide specialist incubation facilities for Chemical Sector SMEs.
Location · Country · Region, District, Metropolitan Area or Municipality	UK Tees Valley
Detailed description · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs	<p>CPI concept for specialist incubation provision for process industry start-up business. Designed to overcome problem of new business start-ups spending initial investment on infrastructure and services. Concept is a 'plug and play' facility where SME can focus funds on technology and business development.</p> <p>Funding provided by Wilton Centre matched by One North East/ERDF public funds.</p> <p>10 'pods', but also equipped communal laboratories, offices and meeting rooms providing facilities for additional tenants.</p> <p>Facility ready March 2011 and already has one confirmed and two potential tenants prior to opening.</p>
Evaluation · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution	New 1000sqm R&D space focussed on new business creation in chemical industry sector.



Lessons learnt	
Future Actions	
Contact information Name Telephone E-Mail Postal Address Website	+44 (0)1642 455340 enquiries@innovation-accelerator.co.uk Wilton Centre, Wilton, Redcar, TS10 4RF, UK www.innovation-accelerator.co.uk
Other information · Documents (reports, presentations, etc.) · Follow on projects	

4.5.3. Innovation Accelerator - Support Services

Title of the Practice / Experience	Innovation Accelerator - Support Services
Aims and Objectives of the practice	Provision of specialist business support services for Process Sector SMEs in North East England.
Location · Country · Region, District, Metropolitan Area or Municipality	UK Tees Valley
Detailed description · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs	3 year programme started in May 2009 to support the creation and growth of process sector SMEs in NE England. Innovation Accelerator team is also responsible for the development of a specialist process sector incubator at Wilton. Business support services include: <ul style="list-style-type: none"> • Support focussed on: • Technology commercialisation. • Market Analysis. • IP Landscaping. • Investment support. • Entrepreneurship coaching. Project funded by ONE/ERDF.
Evaluation · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution	Success measured by: <ul style="list-style-type: none"> • Businesses supported. • Businesses created/attracted. • Jobs created/safeguarded. • Investment leveraged. • Employment support provision.
Lessons learnt	
Future Actions	

Contact information	
Name	
Telephone	+44 (0)1642 455340
E-Mail	info@uk-cpi.com
Postal Address	Wilton Centre, Wilton, Redcar, TS10 4RF, UK
Website	www.uk-cpi.com
Other information	
· Documents (reports, presentations, etc.)	
· Follow on projects	

4.5.4. Centre for Process Innovation

Title of the Practice / Experience	Centre for Process Innovation
Aims and Objectives of the practice	CPI is a technology innovation centre that uses market knowledge and technology understanding to develop and prototype products and processes quickly and efficiently with minimal risk to its public and private sector partners.
Location	UK
· Country	Tees Valley
· Region, District, Metropolitan Area or Municipality	
Detailed description	
· Origin	CPI was set-up in April 2004 to address innovation in the process industries. The CPI business model has already delivered substantial benefit because it links the needs of business to CPI assets and technology expertise. The CPI approach is to:
· Timescale	<ul style="list-style-type: none"> • Carry out market analysis together with businesses or partners that have defined technology or market need. • Set-up a team of technology, market and commercial professionals to design a set of assets that can be used to develop a range of technologies which meet the market need. • Find a combination of private and public investment to build and operate the development assets.
· Agencies involved / implementation	Private companies - both SME and large companies - then use the assets and CPI expertise to prove, develop and scale-up their technology to at least TRL 7.
· Process and detailed content of the practice	Companies then invest their own funds to take the technology to market and create value.
· Legal framework	The development assets are retained and developed by CPI for use by other companies and projects to build a UK capability in the sector.
· Financial framework	The CPI team has consistently delivered innovation assets and leading edge development programmes on time and to budget. In its six years of existence it has grown at over 60% per year and now serves a host of major international clients. It has far outgrown its regional beginnings and has created a national and international reputation in two main technology areas:
· Anticipated / intended outputs	Advanced Manufacturing for the Process Industries; which includes the National Industrial Biotechnology Facility (NIBF) and the Anaerobic Digestion Development Centre (ADDC). Printable Electronics Technical Centre (PETEC). CPI receives funding from a range of sources: Commercial revenue generated by contract R&D, FP7 and TSB projects, BIS and ONE.
Evaluation	
· Indicators used	
· Actual Outputs - Success factors	
· Difficulties encountered and resolution	
Lessons learnt	
Future Actions	



Contact information	
Name	
Telephone	+44 (0)1642 455340
E-Mail	info@uk-cpi.com
Postal Address	Wilton Centre, Wilton, Redcar, TS10 4RF, UK
Website	www.uk-cpi.com
Other information	
· Documents (reports, presentations, etc.)	
· Follow on projects	

4.6. Ustí Region

4.6.1. Centre for Advanced Laboratory Techniques (CALT)

Title of the Practice / Experience	Centre for Advanced Laboratory Techniques (CALT)
Aims and Objectives of the practice	The aim is to establish modern laboratories for teaching and training students of the Faculty of Environment at Purkyně University, but also for other forms of education and training in line with increasing demands for skilled workers.
Location <ul style="list-style-type: none"> · Country · Region, District, Metropolitan Area or Municipality 	Faculty of Environment at Purkyně University Czech Republic Ústí nad Labem
Detailed description <ul style="list-style-type: none"> · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs 	<p>Joint project of the Faculty of Environment at Purkyně University and Research Institute of Inorganic Chemistry. 2003-2005.</p> <p>The Programme development of human resources in the Ústí Region. Chemistry (VÚAnCh). VÚAnCh playing an important role in financing the project. 1.5 mil. CZK.</p>
Evaluation <ul style="list-style-type: none"> · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution 	<p>Laboratories have been gradually put into operation in the first half of 2005, when first students made lab, and several students are working on their dissertations. Full operation of laboratories was launched in September 2005.</p> <p>The project started in 2004/2005, when the special laboratory was built up and equipped in the building of Research Institute of Inorganic Chemistry. Thereafter, regular courses in environmental and technical analytical chemistry are organised here for the students of UJEP. Every year, special courses in advanced instrumental methods are carried out for the students from other European countries (ERASMUS programme).</p> <p>Well trained students with valuable practical skills.</p>
Lessons learnt	Mechanisms and sources of funding, a portfolio of actions that could potentially offer from the university campus to involved companies.
Future Actions	CALT serves as an education centre for practical training of university students in the field of advanced laboratory techniques utilized in industry and environmental protection.

Contact information	
Name	
Telephone	475 284 154
E-Mail	blanka.judlova@ujep.cz
Postal Address	Faculty of Environmental Sciences, UJEP Department of Technical Sciences Usti nad Labem Post. Code. 400 01
Website	http://fzp.ujep.cz/ktv/
Other information	
· Documents (reports, presentations, etc.)	
· Follow on projects	

4.6.2. New procedures and processes of biomass gasification

Title of the Practice / Experience	New procedures and processes of biomass gasification
Aims and Objectives of the practice	The main objective of this project is to get research information and complex know-how for construction and sustainable operability of the energy drive of "Pyrolysis of biomass co-generation" using biomass as a renewable energy source.
Location	Faculty of Environment at Purkynje University
· Country	Czech Republic
· Region, District, Metropolitan Area or Municipality	Ústí nad Labem
Detailed description	
· Origin	Resolver and Investigator: D.S.K. Ltd. Rtynje Bilinou (project co-finansor) and University Purkynje Faculty of Environment.
	Project of Technology Agency TACR.
	Number TA01020563 of "Research and development of purification processes and optimizing the composition of generator gas".
· Timescale	2011-2014.
· Agencies involved / implementation	Institute of Chemical Process ASCR, and other prominent experts from ICT and other companies.
· Process and detailed content of the practice	
· Legal framework	
· Financial framework	Ministry of Industry and Trade, Project TIP FR-TI1/600.
· Anticipated / intended outputs	CZK 45.5 mill (1mil.800 000€ (of which UJEP's share is 20 million CZK).
Evaluation	
· Indicators used	
· Actual Outputs - Success factors	
· Difficulties encountered and resolution	
Lessons learnt	
Future Actions	
Contact information	
Name	
Telephone	475 284 154
E-Mail	blanka.judlova@ujep.cz
Postal Address	Faculty of Environmental Sciences, UJEP Department of Technical Sciences Usti nad Labem Post. Code. 400 01
Website	http://fzp.ujep.cz/ktv/



Other information

- Documents (reports, presentations, etc.)
- Follow on projects

4.6.3. Strengthening the economic importance of the Palacký University in Olomouc Region

Title of the Practice / Experience	Strengthening the economic importance of the Palacký University in Olomouc Region
Aims and Objectives of the practice	The project objective is increase the economic importance of the UP in the region.
Location <ul style="list-style-type: none"> · Country · Region, District, Metropolitan Area or Municipality 	Czech Republic Olomouc Region, Olomouc
Detailed description <ul style="list-style-type: none"> · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs 	Development project of the Ministry of Education Youth and Sports of the 2009 No.15/55, Programme 9. Project start: January 15, 2009. Project Completion: December 31, 2009. Project Development the Ministry of Education 2009 No. 15/55, program 9. The total eligible project cost: 290 000 CZK(11 600€).
Evaluation <ul style="list-style-type: none"> · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution 	Science and Technology Park UP participated in these parts of the project: Creation of databases offer and demand subjects. Promotion of the project at the UP towards companies. Organization of the workshop, the implementation. The creation and publication of innovative catalog of services of departments and students of the University in Olomouc.
Lessons learnt	Analysis of connectivity options, industry and academia mechanisms of developing cluster.
Future Actions	
Contact information Name Telephone Fax E-Mail Postal Address Delivery address: Website	The Science and Technology Park of Palacký University in Olomouc +420 585 631 420 +420 585 631 420 vtpup@vtpup.cz Palacký University in Olomouc Krizkovskeho 8, 771 47 Olomouc IČ: 61989592 DIČ: CZ61989592 VTP UP Slechtitelu 21, 783 71 Olomouc http://www.vtpup.cz/
Other information <ul style="list-style-type: none"> · Documents (reports, presentations, etc.) · Follow on projects 	http://www.vtpup.cz/cs/download/zajimave_dokumenty/investice-intelektualniho-kapitalu.pdf http://www.vtpup.cz/cs/download/zajimave_dokumenty/investice-lidskeho-kapitalu.pdf http://www.vtpup.cz/cs/download/zajimave_dokumenty/univerzita-palackeho-v-olomouci---vyznamny-ekonomicky-subjekt-regionu.pdf

4.7. Province of Limburg

4.7.1. CHEMaterials Campus

Title of the Practice / Experience	CHEMaterials Campus
<p>Aims and Objectives of the practice</p>	<p>In 2008, the “CHEMaterials Campus” - in full: “High Chem & New Materials Campus” - project started. This cooperative venture between DSM and Zuyd University is intended to make the Chemelot Campus in Sittard-Geleen the number one Materials Valley of Europe. This is being effected by focusing on Open Chemical Innovation.</p> <p>The point at issue is trying to interest companies active in chemicals, materials and life sciences in the South Limburg region as an excellent location for business, research & development and education. New materials are being developed in this region that may result in leading positions worldwide in many different product and market combinations.</p> <p>DSM and Zuyd University are convinced that this ambition can be realised if more parties from the region make a joint effort. DSM and Zuyd University have taken the initiative.</p> <p>The CHEMaterials Campus project involves 11 project components.</p> <p>Parts 1 to 7, inclusive, relate to business creation.</p> <p>Parts 8 to 11, inclusive, relate to business awareness.</p> <p>The following components are involved, which have a logical samenhang [cohesion].</p> <p>Realisatie van een inloopleab [Realisation of an open lab].</p> <p>Screenen van nieuwe ideeën en/of bedrijven [Screening new ideas and/or businesses].</p> <p>Ondersteuning en bijeenbrengen van partijen [building the Campus Community].</p> <p>Coaching & training.</p> <p>Organiseren van events voor de stimulering van innovatie [Organising events to stimulate innovation].</p> <p>Kennis halen en kennis brengen [Acquiring knowledge and contributing knowledge].</p> <p>Service Boulevard.</p> <p>Chemical Innovation Congress.</p> <p>Netwerkvorming en Open Chemical Innovation [Networking and Open Chemical Innovation].</p> <p>Chemelot Colloquium.</p> <p>Slimme regio's voor clusters van kracht [Smart regions for powerful clusters].</p>
<p>Location</p> <ul style="list-style-type: none"> · Country · Region, District, Metropolitan Area or Municipality 	<p>Netherlands</p> <p>Province of Limburg, South Limburg, Municipality of Sittard-Geleen</p>
<p>Detailed description</p> <ul style="list-style-type: none"> · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs 	<p>Project component cohesion.</p> <p>The activities within the project have been coordinated and have a central objective: business creation.</p> <p>The project components relate to business creation or business awareness.</p> <p>The points at issue are placing innovative subjects on the agenda or putting innovation themes into operation.</p> <p>The project components focus on stimulating the CHEMaterials cluster, i.e. on the community as a whole or on a specific company.</p> <p>The activities are geared to generating business and acquiring nieuwe bedrijven [new businesses] (component 2). The inloopleab [open lab] offers the physical space for joint laboratory activities (component 1). By means of the service boulevard, businesses are able to concentrate on their core activities (component 7).</p> <p>Cluster-exceeding themes that relate to innovatiegebieden [areas of innovation] are defined and discussed in consultation with the various businesses in the cluster (component 11). These businesses are brought together via netwerken [networks] that hook up to the campus development (component 9). Depending on the needs of the participating SMEs, the themes can be detailed in the other project components.</p> <p>It may be that a problem regarding a product innovation can be solved by bringing specific businesses into contact.</p>



	<p>In that case, this involves creating setting initial ideas can be uitgewisseld [exchanged] between entrepreneurs with a problem and entrepreneurs who can solve these problems (component 6). It may also be the case that the problem is so specific that there is a need for a specific solution. If this is the case, a dedicated samenwerking-project [cooperation project] is set up (component 5).</p> <p>The Chemelot Colloquium addresses specific technical-substantive subjects that are interesting for the knowledge workers at the Chemelot Campus. These knowledge workers may also originate from the cooperation processes (component 10). The community building focuses specifically on strengthening the Chemelot business community (component 3). These activities focus more on providing information about campus developments, individual business, etc. As part of this aspect there are coaching en training [coaching and training] activities. These are geared specifically to Campus starters (component 4).</p> <p>On the basis of the results and experiences from the total programme, a congres [congress] will be organised every two years (component 8).</p>
Evaluation <ul style="list-style-type: none"> · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution 	
Lessons learnt	
Future Actions	
Contact information Name Telephone E-Mail Postal Address Website	Dirk Plees +31 43 - 389 76 64 d.plees@prvlimburg.nl
Other information <ul style="list-style-type: none"> · Documents (reports, presentations, etc.) · Follow on projects 	The CHEMaterials Campus project - Annex A.

4.7.2. Open Innovation

Title of the Practice / Experience	Open Innovation
Aims and Objectives of the practice	Open innovation - as opposed to closed innovation - focuses on collaboration and clustering between firms and research institutions. It provides enterprises and institutions the opportunity to use, in a world of widespread knowledge, not only their own research and development opportunities, but also those of others. In addition, proprietary inventions not in use can be brought out (e.g. through licensing, joint venture programs, spin-offs). Also they have the opportunity to focus more on their core competencies.
Location <ul style="list-style-type: none"> · Country · Region, District, Metropolitan Area or Municipality 	Netherlands Province of Limburg, South Limburg, Municipality of Sittard-Geleen
Detailed description <ul style="list-style-type: none"> · Origin · Timescale · Agencies involved / implementation 	In the Dutch province of Limburg there is no technical university, so technology transfer must be organized from the rest of the Netherlands (Eindhoven) or from across the border (e.g. Aachen, Liege). For that reason Limburg has a long tradition in technology transfer from research centers of local (big) companies to SME's. Ongoing. Provincie Limburg Government, Chemelot, University of Maastricht.

- Process and detailed content of the practice
- Legal framework
- Financial framework
- Anticipated / intended outputs



The Limburg province model tries to involve large companies, SME's, universities and institutes in a collaborative mode, assisted through the creation of supporting facilities and public/private financing sources.

The methodology for the Regional Open Innovation Policy involves the following components:

- Idea Generation.
- Business Feasibility.
- Development.
- Scale and Validation.
- Transfer to Running Business.

Evaluation

- Indicators used
- Actual Outputs - Success factors
- Difficulties encountered and resolution

	LIOF	Merit	Province	EFRO	DSM	Interreg	L / D							
Best practices	Account-management	Easy2clean anti-bacterial ppp	Venture fund	Strategisch Innoveren	Koersvast	Innovation fund	I-zone	Kennis-scheques	Resolve	Chemelot	TTC	Cross-Roads	Automotive-net	Limburg Venture
specific 														
general 														
Idea generation:														
Interviews	X										X			
Creativity sessions				X										
Workshops		X				X					X	X	X	
Dedicated workshops;		X				X					X	X		
External Business Developer:											X	X		
Feasibility studies						X					X			
Innovation vouchers											X			
Innovation scans			X				X							
Business feasibility:														
Joint business development														
R&D services:									X					
Development:														
Licensing in														
Licensing out														
Venturing			X			X								X
Scale and validation;														
Spin in:														
Spin out:														
Acquisitions														
Divestments														
Transfer to running business:														
Infrastructure														
Facilities									X					
€ -funds			X			X								X

Lessons learnt

Future Actions

Creation of the Chemelot Campus.



Contact information Name Telephone E-Mail Postal Address Website	Dirk Plees +31 43 - 389 76 64 d.plees@prvlimburg.nl
Other information · Documents (reports, presentations, etc.) · Follow on projects	Open Innovation presentation by Theo Hommels - Annex B.

4.8. Principado de Asturias

4.8.1. Cross Sector Cooperation in the Chemical and Process Industries

Title of the Practice / Experience	Cross Sector Cooperation in the Chemical and Process Industries
Aims and Objectives of the practice	<p>Aims and Objectives of the practice Turn industry diversity and non competition into an opportunity for exchange of experience and cross fertilisation in key areas for the chemical and process industry.</p> <p>Identify areas of improvement for firm competitiveness.</p> <p>Enhance the image of the industry.</p> <p>Address industry key issues from a cross sector point of view, with a wider perspective: environmental issues, logistics, hazard prevention and safety at work.</p>
Location · Country · Region, District, Metropolitan Area or Municipality	Spain Principado de Asturias
Detailed description · Origin	<p>The Association of Principado de Asturias Chemical and Process Industries (AIQPA) was born in 2000 to foster the development and cooperation of the chemical and process industry located in Asturias, in areas such as finance, innovation and technology, marketing and labour issues.</p> <p>Some relevant features of the chemical industry in Asturias makes it slightly different of most of the regions with a strong concentration of the chemical industry:</p> <p>The chemical plants are distributed throughout the territory, and there are no Chemical Parks.</p> <p>Chemical plants belong to different sectors, not as closely related as it is usual in other chemical regions:</p> <ul style="list-style-type: none"> • Pharmaceutical. • Synthetic Fibres. • Fertilisers. • Industrial gases. • Coke derivatives. • Biochemistry (Production of agar agar). • Pulp processing. <p>Each sub-sector has just one or two companies at most, and therefore there is no competition among them, leaving room for a wide horizontal cooperation.</p>
· Timescale	The Association has been operational since 2000.
· Agencies involved / implementation	The Association has been established by the companies themselves, although some of the activities have been supported by the Regional Development Agency (IDEPA) and other public funding sources.
· Process and detailed content of the practice	The cooperation within the Association has been evolving from basic networking and sector representation onto the production of specific outputs in areas of interest for member companies.

<ul style="list-style-type: none"> · Process and detailed content of the practice 	<p>The Association identified specific areas of common interest and created Working Groups focusing on each of them:</p> <ul style="list-style-type: none"> • Hazard prevention and environment. • Industrial regulations and mechanical technology. • The Working Groups allowed a much more intense cooperation and in-depth analysis of specific issues. The work of this Groups led to the production of: <ul style="list-style-type: none"> • Manual for Hazard Prevention and Safety at Work. • Best practices in environmental protection in chemical industry. • Technical Seminars and Business Fora. • Training courses.
<ul style="list-style-type: none"> · Legal framework 	<p>The Association is established as non-for-profit organisation. The Association is exclusively composed of chemical and process industry companies. Public companies have an observer status.</p>
<ul style="list-style-type: none"> · Financial framework 	<p>The Association operational budget is funded by the member companies. Specific projects are partly funded by public agencies such as the Asturias Regional Development Agency (IDEPA).</p>
<ul style="list-style-type: none"> · Anticipated / intended outputs 	<p>Objectives set in the foundation chart were very broad: represent, manage and protect the common interests of the associated firms.</p> <p>Possible outputs were:</p> <ul style="list-style-type: none"> • Foster cooperation and coordination between members. • Analyses and studies on any issue associated firms may consider of interest: environmental, labour related, tax, economic and financial issues, among others. • Networking with other organisations. • Provide services related to the aims of the association.
<p>Evaluation</p> <ul style="list-style-type: none"> · Indicators used · Actual Outputs - Success factors 	<p>Expected outputs have been evolving; new objectives are set once previous ones were achieved. Initial objectives were mostly connected to sector representation, vis-à-vis the regional government and the society as a whole.</p> <p>Later on the Association undertook specific activities and produced the following outputs:</p> <ul style="list-style-type: none"> • Manual for Hazard Prevention and Safety at Work. • Best practices in environmental protection in chemical industry. • Site Selection in the Chemical and Process Industry. • The Association also organized Technical Seminars and Business For a and Specialized Training courses for company staff: <ul style="list-style-type: none"> • Risk assessment. • Legionella prevention and control Programme. • Introduction to IUCLID 5 and preparation of Pre-registrations. • Chemical base product engineering. • Specialist in industrial applications of water.
<ul style="list-style-type: none"> · Difficulties encountered and resolution 	<p>Strong company key staff commitment helped the development of the Association activities. However financial constraints have limited the ability of the Associations to undertake more ambitious projects.</p>
<p>Lessons learnt</p>	<p>Personal involvement and strong commitment of company key staff was critical to kick-off and develop the Association activities. Then other staff became progressively involved.</p> <p>The activity of the Association has shown that Chemical Industries belonging to different subsectors can find topics of common interest, and there are possibilities of cross fertilisation.</p>
<p>Future Actions</p>	<p>Cooperation with other sectors, such as food processing industry.</p> <p>Collaboration with other related national and international clusters; knowledge and experience transfer.</p>
<p>Contact information</p> <p>Name</p> <p>Telephone</p> <p>E-Mail</p> <p>Postal Address</p> <p>Website</p>	<p>Luz Iglesias</p> <p>+34 660 34 90 88</p> <p>contacto@aiqpa.com</p> <p>Centro Científico-Tecnológico, Campus de El Cristo</p> <p>33006 Oviedo</p> <p>www.aiqpa.com</p>



Other information

- Documents (reports, presentations, etc.)
- Follow on projects

www.aiqpa.org

4.8.2. Good Environmental Practices

Title of the Practice / Experience	Compendium of Good Environmental Practices based on the Technical sector experience
Aims and Objectives of the practice	<p>To briefly describe in the form of record cards the good environmental practices, technical as well as action-oriented, that could be applied in a chemical installation.</p> <p>To provide a practical manual that would help these environmental practices to be rapidly implemented in the companies of the chemical sector, thus saving costs and time for preliminary studies.</p>
Location <ul style="list-style-type: none"> · Country · Region, District, Metropolitan Area or Municipality 	Spain Principado de Asturias
Detailed description <ul style="list-style-type: none"> · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs 	<p>The Chemical and Process Industry of Spain according to the National Institute of Statistics represents 8% of the Spanish industry business and has the mayor investment in environmental practices following the <i>eco-efficient</i> strategy.</p> <p>Summarizing the best environmental practices that will obtain customer satisfaction and at the same time will allow less resource usage, lower levels of contamination and lower production of residues, spillage, noise, emissions is an important task.</p> <p>Published in 2009.</p> <p>AIQPA (Association of Chemical Industries of Asturias) member companies with the financial support of the Regional Development Agency (IDEPA). The compendium was elaborated by the Security and Environment Commission at AIQPA.</p> <p>Study and evaluation of the best environmental practices that should be implemented in the chemical industry with accordance to national laws and international standards.</p> <p>Preparation of the compendium of best environmental practices, to help rapidly fulfil the necessary requirements.</p> <p>The good environmental practices analyzed are focused on activities that are action-oriented and organizational and therefore require minimal investment, and practices that have technical aspects and require some investment.</p> <p>The Compendium has 3 most important chapters that explain the best environmental practices ordered by the stage of processing activity (such as prime materials, resources and products, and fabrication processes and installation), by the environmental aspect (such as use of resources, air quality, residual waters, noise, water contamination and etc.) and specific best practices that need to be taken in emergency situations.</p> <p>ISO-14001 standard, national law 26/2007 (Ley de Responsabilidad Medioambiental) and various directives.</p> <p>The study was prepared by the Association of Chemical Industries of Asturias (AIQPA) with the financial support of the Regional Development Agency (IDEPA).</p> <p>Compendium to help raise environmental awareness among the companies of the chemical and process industry.</p> <p>Compendium to be widely used by the companies of the chemical and process industry in Asturias to efficiently implement the best practices concerning the environmental issues.</p> <p>The best environmental practices implemented using this compendium to minimize the environmental impact that could arise from companies' activity.</p>
Evaluation <ul style="list-style-type: none"> · Indicators used 	

<ul style="list-style-type: none"> Actual Outputs - Success factors 	<p>Several chemical installations have been improved using the described best environmental practices. Examples of this best practices are:</p> <ul style="list-style-type: none"> The use of rain water as cooling water of a nitric acid plant. System for smell reduction with thermal oxidation. Treatment of residue water with best known technique (MTD = Mejores Tecnologías Disponibles).
<ul style="list-style-type: none"> Difficulties encountered and resolution 	<p>Active participation of industry representatives.</p>
Lessons learnt	<p>The interest of joining expertise from diverse areas and the cross-fertilization effect it carries.</p> <p>The awareness created regarding the importance of environmental issues sometimes neglected due to their reduced economical impact.</p> <p>Relevance for staff wellbeing through definition of safer working protocols and increased understanding.</p>
Future Actions	<p>Internationalization and exchange of good practices with other geographical locations, including English translation of the manual.</p> <p>Update, adaptation to other environments and widening of contents.</p> <p>Creation of e-learning platform.</p>
Contact information Name Telephone E-Mail Postal Address Website	<p>Luz Iglesias +34 660 34 90 88 contacto@aiqpa.com Centro Científico-Tecnológico, Campus de El Cristo 33006 Oviedo www.aiqpa.com</p>
Other information <ul style="list-style-type: none"> Documents (reports, presentations, etc.) Follow on projects 	<p>The manual "Guía de buenas prácticas ambientales en las industrias químicas y de procesos" published by AIQPA (ISBN 978-84-613-3096-6).</p>

4.8.3. Implementation of Safety Good Practices from previously developed studies

Title of the Practice / Experience	Implementation of Safety Good Practices from previously developed studies
Aims and Objectives of the practice	<p>To specify and elaborate good safety practices common to all chemical and process industries (including food industry), implemented in everyday work, with objective of maximizing safety at work and minimizing risks.</p> <p>To produce a practical manual on hazard prevention and safety at work to be used across the process industry.</p>
Location <ul style="list-style-type: none"> Country Region, District, Metropolitan Area or Municipality 	<p>Spain Principado de Asturias</p>
Detailed description <ul style="list-style-type: none"> Origin Timescale Agencies involved / implementation 	<p>Hazard prevention and safety at work are particularly important in the chemical industry, as it involves personal and public hazards. The AIQPA (Association of Chemical Industries of Asturias) aims to harmonize the security standards and risk prevention guidelines of the chemical industry in Asturias, based on the current legislation, the international standards and the necessities of each company. Defining the main safety practices common to all is the first step towards its realization.</p> <p>Manual published end of 2004 and officially presented on February, 16th, 2005 during a conference held at the Asturias Press Club.</p> <p>AIQPA (Association of Chemical Industries of Asturias) member companies with the financial support of the Regional Development Agency (IDEPA). The document was prepared by the company directors of hazard prevention and safety at work.</p>



<ul style="list-style-type: none"> · Process and detailed content of the practice 	<p>The practice was initiated by the persons in charge of safety and health at work in each member company to develop a guideline with common best safety practices and implement them in each company.</p> <p>Analysis of the currently applied rules and standards.</p> <p>Development of a manual intended to contribute in the formation of the newly incorporated workers and contractors in the chemical companies.</p> <p>Education and training of the workers and contractors.</p> <p>The manual is divided in thematic chapters, each one of them addressing one important risk area: Introduction, General guidelines for risk prevention, Safety procedures before starting a job, Signalization, blocking mechanisms and beacons, Ditches and excavations, Chemical risks, Fire risks, Electrical risks, Mechanical risks, Working at height risks, Load manipulation and lifting equipment risks, Working in confined spaces risks, Working at extreme temperatures risks, Personal Protection Equipments, Transport, load and unload of dangerous goods, Residue management and other environmental considerations, Actions in case of an emergency and Actions in case of an accident.</p>
<ul style="list-style-type: none"> · Legal framework 	<p>The chemical industry is subject to tight hazard prevention and safety at work regulations, both by European and national regulations - National Law on Prevention of Work Risks (Ley de Prevención de Riesgos Laborales 31/1995), and there is an increased awareness among companies.</p>
<ul style="list-style-type: none"> · Financial framework 	<p>The study was prepared by the Association of Chemical Industries of Asturias (AIQPA) with the financial support of the Regional Development Agency (IDEPA).</p>
<ul style="list-style-type: none"> · Anticipated / intended outputs 	<p>Manual to be widely used by chemical industry companies, whether integrated or not in AIQPA.</p> <p>Good practices in safety and health at work to become integrated part in the activities and the decisions developed at the companies.</p> <p>Workers and contractors to be fully informed about their allowed and disallowed actions at the work place, so that the safety measures become indispensable part of their daily routine with a final goal to be reached of zero accidents at work.</p>
<p>Evaluation</p> <ul style="list-style-type: none"> · Indicators used · Actual Outputs - Success factors 	<p>There has been no specific evaluation of the impact.</p> <p>Manual produced and widely disseminated.</p> <p>Manual has been effectively used in internal training.</p> <p>Copies of the manual have been requested by other chemical industry associations and companies for their hazard prevention and safety at work courses.</p> <p>The manual has been produced by the company directors and is very practical. The practical approach of the manual has helped to its wide use.</p>
<ul style="list-style-type: none"> · Difficulties encountered and resolution 	
Lessons learnt	<p>There is an increased awareness in the chemical industry about hazard prevention and safety at work.</p>
Future Actions	<p>Update of the manual, adapting to new regulations.</p> <p>Specific adaptation for the food processing industry.</p> <p>Possibility of on-line training through e-learning platform.</p>
<p>Contact information</p> <p>Name</p> <p>Telephone</p> <p>E-Mail</p> <p>Postal Address</p> <p>Website</p>	<p>Luz Iglesias</p> <p>+34 660 34 90 88</p> <p>contacto@aiqpa.com</p> <p>Centro Científico-Tecnológico, Campus de El Cristo</p> <p>33006 Oviedo</p> <p>www.aiqpa.com</p>
<p>Other information</p> <ul style="list-style-type: none"> · Documents (reports, presentations, etc.) · Follow on projects 	<p>The manual and a CD are published by AIQPA: "Manual Básico de Prevención de Riesgos Laborales en las Industrias Químicas y de Procesos" (ISBN 84-609-3285-0).</p>

4.8.4. Site Selection in the Chemical and Process Industries

Title of the Practice / Experience	Site Selection in the Chemical and Process Industries
Aims and Objectives of the practice	Identify the main location and relocation factors for the chemical and process industries.
Location <ul style="list-style-type: none"> · Country · Region, District, Metropolitan Area or Municipality 	The report refers particularly to Southern Europe, with special incidence in Spain but it also has references to other European countries. However most of the analyses have quite a global value.
Detailed description <ul style="list-style-type: none"> · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs 	<p>The origin of the study was the idea of compiling and transmitting some of the industry insight on the main site selection criteria, to help companies in their location – relocation process and also the Development Agencies working on investment attraction.</p> <p>The preparation of the report took approximately 1 year and was published in 2007.</p> <p>The study was prepared by the Association of Chemical Industries of Asturias (AIQPA) with the financial support of the Regional Development Agency (IDEPA). Over 50 companies and chemical industry associations located in Spain and over 25 in other European countries the EU (Italy, Belgium, France, Germany, Netherlands, Switzerland and UK) were interviewed.</p> <p>The methodology of the study included:</p> <ul style="list-style-type: none"> • Thorough bibliographical research. • Identification of location criteria: <ul style="list-style-type: none"> o Strategic Factors. o Labour and Socioeconomic Factors. o Technical Factors. o Industrial Environmental Factors. • Personal interviews to high managers or location managers of companies and industry associations. • Scoring of location factors. • Analysis of location factors and of the territorial bias of the location factors. • Preparation of the report, tables and figures. <p>Key location factors in the chemical industry as a whole are:</p> <ul style="list-style-type: none"> • Good transport infrastructure and communication network. • Availability of quality industrial land in appropriate location, far from highly developed urban and tourist areas. • Reliable and competitive priced utilities: water, gas and electricity. • Trained and flexible labour force. • Industrial tradition, particularly in chemical industry; no reluctance against industrial activity in community. • Other relevant factors for site selection may become key when choosing between alternative location offering similar conditions on key factors: <ul style="list-style-type: none"> • Grants and taxes. • Technical and corporate services. • Safe environment, personal services for company employees and managers. <p>Some company cultural differences show up when ranking location factors. Spanish companies tend to rank strategic and technical factors higher, whereas European companies give more importance to socio-economic and industrial environment factors.</p> <p>The study was supported by the Asturias Regional Development Agency (IDEPA). The total cost of the report amounted to.</p> <p>The main output was the production, printing and distribution of the report.</p>
Evaluation <ul style="list-style-type: none"> · Indicators used 	As far as we know, this could be the first study in Europe to identify location specific issues taking into consideration factors of relevance for both the industry and the Regions; thus it ranks not only commercial factors but also aspects of public interest, exposed in an open manner.



<ul style="list-style-type: none"> Actual Outputs - Success factors Difficulties encountered and resolution 	<p>The report provided a full and accurate view of the main location factors for the chemical industry in average. The study is considered a good guidance to development agencies to work in the improvement of some factors that may help to attract chemical industry location. The study is also of great help to location and general managers as a benchmark for their site selection.</p> <p>500 copies were produced and distributed to the industry and elsewhere.</p> <p>The budget limitations made impossible to access additional companies and associations in other European countries, in order to build a "European Map of Location Factors" taking into account the territorial differences in factor endowment. A wider sample may have also allowed a further analysis of the location factors in different chemical industries.</p> <p>Difficulties in finding partners in Northern Europe prevented the study from attaining a wider geographical relevance.</p>
Lessons learnt	<p>Validity of the study as an important tool to assist in political decision making (e.g. infrastructures, services, etc) thanks to the ranking of significant criteria.</p> <p>Identification of difficulties, development of methodology and problem solving schemes applicable in future studies.</p> <p>Results dissemination focusing public bodies, facilitating diffusion.</p>
Future Actions	<p>A review of European Chemical Site Selection (location demand) and Map Location Factors (location supply), eventually focused in high added value chemical industry, may help to increase the attractiveness of the EU for the chemical industry.</p> <p>Planned periodical updates every five years; the next one should be done in 2012 with a wider geographical coverage - extension to central and northern Europe.</p>
Contact information Name Telephone E-Mail Postal Address Website	Luz Iglesias +34 660 34 90 88 contacto@aiqpa.com Centro Científico-Tecnológico, Campus de El Cristo 33006 Oviedo www.aiqpa.com
Other information <ul style="list-style-type: none"> Documents (reports, presentations, etc.) Follow on projects 	<p>The document is available in Spanish and English at the Asturias Association of Chemical and Process Industries (ISBN 978-84-611-7998-5).</p> <p>Ideas for possible follow up projects include online availability of existing and future reports in electronic format and the development of a multi-platform decision making tool.</p>

4.8.5. Training and Technology Transfer between Academia and the Chemical and Process Industries

Title of the Practice / Experience	Training and Technology Transfer between Academia and the Chemical and Process Industries
Aims and Objectives of the practice	Identify areas of interest for the industry, and carry out training actions coordinated and conducted by Oviedo University and other invited lecturers from Industry and Academia.
Location <ul style="list-style-type: none"> Country Region, District, Metropolitan Area or Municipality 	Spain Asturias
Detailed description <ul style="list-style-type: none"> Origin 	<p>The increasingly complex external and institutional relationships the industry faces, the multiple approaches and diverse needs prompt a coordinated assessment of common interests, with an aim to promote cooperation amongst the association members. AIQPA has from the beginning strived to establish services, network, promote analysis and studies and encourage activities of common interest for its members, in order to reach the aims and objectives of the Association.</p>

<ul style="list-style-type: none"> · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs 	<p>The internal training activities started in 2002 and have been taking place in various degrees of intensity ever since.</p> <p>The activities have been carried out by the Association of Chemical Industries of Asturias (AIQPA) with the financial support of the Regional Development Agency (IDEPA), the University of Oviedo and the FORMIC Programme (Fundación para el desarrollo de la Formación en las Zonas Mineras del Carbón).</p> <p>The activity has been carried out as workshops, seminars and courses addressing a wide variety of subjects and key issues, such as:</p> <ul style="list-style-type: none"> • In 2002 AIQPA organized several seminars on Industrial Safety, Seveso II Directive and experience exchanges with Spanish industrial associations from other regions. • In 2003 the main training activity consisted in safety courses related to Preventive Management, IPPC Directive, DELT@ Accident Reporting System and Dangerous Goods Security (ADR, RID, IMO-IMDG) • The 2004 courses focused on safety: Risk analysis for management and technical staff, National, Regional, ATEX and IPPC Directives, the Human Factor, SQAS, Safety Report preparation, etc. • 2005 was marked by the publication and dissemination of the Occupational Hazard Prevention Handbook but also included seminars on areas such as REACH Regulations and other. • Other specific training programmes carried out since 2005 include: <ul style="list-style-type: none"> o Prevention and control of legionellosis and legionella for technical staff at industrial facilities (Type approved by the Ministry of Health). o IUCLID 5 and REACH-IT. o Product Engineering for management and technical staff in the Chemical Industry. o Water Industrial Applications Specialist; a 280 hrs programme with theoretical and practical contents followed by a 320 hrs internship. Imparted by 11 University Professors and 22 highly qualified senior staff from the chemical and processing industry, the course carries a hiring commitment. <p>The main output, expected and attained, has been multiple: the dissemination of knowledge within the industry, the transfer of knowledge from the academic world to the industry and the incorporation of practical knowhow and hands-on experience to the academic training, through a coordinated action involving both Industry and Academia.</p>
<p>Evaluation</p> <ul style="list-style-type: none"> · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution 	<p>There has been no specific evaluation of the impact.</p> <p>The main success factor has been the increased employability of the participants in some of the courses and most specifically in the Water Industrial Application Specialist.</p>
Lessons learnt	
Future Actions	<p>Possible future actions include:</p> <p>International collaboration with other associations in various areas of evidence-based training, jointly performed by Industry and Academia.</p> <p>Improvement of the AIQPA web site to include access to training materials, downloadable in electronic format. e-learning platform.</p>
<p>Contact information</p> <p>Name</p> <p>Telephone</p> <p>E-Mail</p> <p>Postal Address</p> <p>Website</p>	<p>Luz Iglesias</p> <p>+34 660 34 90 88</p> <p>contacto@aiqpa.com</p> <p>Centro Científico-Tecnológico, Campus de El Cristo</p> <p>33006 Oviedo</p> <p>www.aiqpa.com</p>
<p>Other information</p> <ul style="list-style-type: none"> · Documents (reports, presentations, etc.) · Follow on projects 	



4.9. Cheshire West & Chester

4.9.1. Development of Gold Standard Frameworks

Title of the Practice / Experience	Development of Gold Standard Frameworks
Aims and Objectives of the practice	To develop a national framework for continuous professional development setting out the skills required for world class performance in key job roles in the process industries.
Location <ul style="list-style-type: none"> · Country · Region, District, Metropolitan Area or Municipality 	UK Standard has been extensively used by companies in the NW region
Detailed description <ul style="list-style-type: none"> · Origin · Timescale · Agencies involved / implementation · Process and detailed content of the practice · Legal framework · Financial framework · Anticipated / intended outputs 	<p>Cogent.</p> <p>Started about 3 years ago and ongoing.</p> <p>NSAPI, CNW (and other chemical clusters).</p> <p>The Gold Standard is Cogent Sector Skills Council's national employer-led framework for competency management in the process industries including Chemicals, Polymers, Pharmaceuticals and Petroleum.</p> <p>The Gold Standard sets the national standard for Continuing Professional Development across key job roles. It operates across four key areas of competency: technical, business improvement, compliance and functional and behavioural. It aims to allow companies and individuals to begin a journey that will see them work their way towards a world-leading skills set. The frameworks can be used both by organisations and individuals to access their level of collective and/or individual competence against the Gold Standard for each role. They can start this at any point on the Gold Standard, depending on development needs.</p> <p>Cogent have led the process of developing Gold Standards for a number of key job functions in the process industries and particularly in the chemical sector. The development of these frameworks has had significant employer input.</p> <p>The process for utilising the frameworks is roughly as follows:</p> <p>Through nationally accredited qualifications Companies can access the Gold Standard via the Cogent website, and assistance provided to help companies assess their skills competence from NSAPI staff.</p> <p>Individuals' skills and training can then be compared to the Gold Standard for each role.</p> <p>Appropriate training provision is identified within the Gold Standard to close any skills gaps.</p> <p>Employers can then access Gold Standard qualifications from approved NSAPI providers.</p> <p>The process takes place at a pace and time to suit employers and their employees.</p> <p>The approved training providers access funding where appropriate.</p>
Evaluation <ul style="list-style-type: none"> · Indicators used · Actual Outputs - Success factors · Difficulties encountered and resolution 	The fact that the chemical industry are using the frameworks (e.g. to assess competence, identify skill gaps, develop succession plans and the attendant training requirements).
Lessons learnt	Cogent, as a result of feedback from industry, found they could not be too specific with job roles and titles if the frameworks were to be of use to range of types and sizes of companies within the sector.
Future Actions	Cogent are continuing to lead the development of further Gold Standard frameworks such that they will exist for all the job functions from operators level to board room.

Contact information	
Name	Duncan Simcock Operations Manager Chemicals Northwest +44(0)1928 515678 duncan.simcock@chemicalsnorthwest.org.uk The Heath, Runcorn, Cheshire, WA7 4QX Website- www.chemicals.org.uk
Telephone	
E-Mail	
Postal Address	
Website	
Other information	
· Documents (reports, presentations, etc.)	http://www.cogent-ssc.com/Gold_Standard/index.php
· Follow on projects	

5. Additional annexes

5.1. CHEMaterials Campus

1. Realisation of an open lab

The availability of turnkey accommodation in the form of office/lab modules and an open laboratory is an essential underlying condition in order to attract starters and restarts to the Chemelot Campus. From within the Campus community, it will enable these businesses to convert their ideas more rapidly into a successful product or process that must form the basis for a sustainable business.

Objective

The definition of the most favourable office/lab modules and open lab (length of use ranging from several quarters to three years) concept, in view of:

- The intended establishment on the Campus of the Zuyd University Centre for New Materials;
- The target group of starters/restarts;
- Projects in the context of PPP programmes;
- Campus residents.

Approach and realisation

To guarantee that establishing an open lab is sufficiently in line with the requirements of current and future stakeholders and that no opportunities are therefore missed, a strategic plan has been drawn up with experts from Brink Groep. This plan contains a process involving the following steps:

- Forming a project team consisting of the most important stakeholders.
- Finally adopting the strategic plan on the basis of the Brink Groep proposal.
- Survey and interviews.
- Drawing up a preliminary memorandum.
- Drawing up a framework policy document.
- Detailing the framework policy document in a schedule of requirements and facilities concept.
- Approval of the budget and business case by Chemelot.

2. Screening new ideas and/or businesses

Objective

More businesses working together at the Chemelot Campus in the open innovation model. By 2013 at the latest, 30 new businesses/alliances should jointly have at least 150 employees and should be generating € 30 - 130 million in turnover in one or more of the (innovation areas) of the Chemelot Campus.

Approach and realisation

This project component contains the following actions:

- Structuring the business generation process, resulting in a process flow chart with decision criteria. This action is based on experiences on the Campus with **Isiobionics** and with spin-off creation elsewhere.
- Adjusting the monitoring tool action to support business development and acquisition.
- Creating awareness of and activating potential sources of ideas / business plans.
- Implementing the business generation process.
- Creating awareness of and activating lead generators (a lead is an existing business that has a potential fit with the Campus).
- Implementing acquisition (as follows: lead --> prospect --> lessee).

3. Building the Campus community

Objective

Community building by linking starters and potential starters to businesses at the Chemelot Industrial Park and the Chemelot Campus.

- Spreading the knowledge and skills of the expertise groups to serious prospects on the Campus.
- Making the supports departments on the Campus and at Zuyd University accessible to starters.
- Encouraging partnerships between starters and supports departments.



Approach and realisation

For the purpose of actively linking existing businesses at Chemelot to starters and potential starters, meetings, workshops and information sessions are being organised in the context of the R&B Business Club, which are focused specifically on the community. These may be of a social, substantive or managerial nature.

4. Coaching & training

Context

Knowledge workers and technologists become entrepreneurs because they have a product or idea that they expect will have added value for the market. We wish to use this project component to facilitate entrepreneurs on the Chemelot Campus by offering them a sparring partner, a coach who focuses clearly on the objectives, who holds up a mirror and keeps them on the right track strategically. The coaching on offer may vary from commercial coaching (e.g. tax-related, marketing or legal) and technical and substantive coaching to forms dealing more with leadership, opportunities and inspiration.

Objective

Increasing the chances of success for starters/restarters and/or cooperating partners in the (open lab) by:

- Offering tailor-made advice and supervision where necessary;
- Offering trainings with respect to open chemical innovation;
- Organising intervision for Campus residents.

Approach and realisation

This project component should be realised by the end of the project and will be built up in four phases:

- Survey and interviews on the Campus and in existing networks.
- Strategic plan and description of the product.
- Drawing up a preliminary memorandum.
- Constructing a coaching network with intervision.

It is important to create a pool of coaches/trainers that should respond to focused questions from starters and restarters. It is also important to continue to learn from new experiences of other incubators. The personal fit between the coach and the entrepreneur is vital to success.

5. Organising events to stimulate innovation

Objective

A focus of stimulating innovation by linking the knowledge strengths of the Chemelot Campus to partners and knowledge partners in the Euroregion. This will be effected preferably by involving one or more businesses located on the Campus.

Approach and realisation

Linking Chemelot residents to existing businesses in the region (ELAt) from the sectors agro food, high-tech systems, life sciences and energy. This will involve:

Supervising entrepreneurs in the in the chemical sector in projects such as Techstart and the programmes of OP-Zuid [OP South].

Organising small-scale session at which the creation, design and engineering process will be considered by all participants for bringing about market transitions by means of new services/products. The point at issue is that creativity is converted into a technical plan by means of design.

6. Acquiring knowledge and contributing knowledge

Objective

This project component focuses on creating a setting (preferably on the Chemelot Campus) where entrepreneurs with questions and entrepreneurs with possible answers can exchange ideas. This component also acts as a prelude to business-to-business development projects. The point at issue is bringing together businesses from the various powerful clusters. The Campus offers the space to organise these sessions.

Approach and realisation

The SKIP method will be used, which was developed in the context of the Cohesive Innovation Programme in Limburg. SKIP stands for Systematic Knowledge Transfer for Innovative Production Development (see also projectonderdeel 11 [project component 11]).

The SKIP sessions focus on the substantive organising capacity of the individual businesses in clusters and networks in the province, which are in line with the themes in the Province of Limburg's Acceleration Agenda.

7. Service Boulevard

Context

The creation of the Service Boulevard is a response to the conclusion of various investigations (e.g. NENSI, 2007) and practical experiences at Chemelot Campus that proper supervision and support of starters and restarters makes an important contribution to the growth rate and the likelihood of success.

Objective

The Service Boulevard focuses on the (partial) physical provision of services tailored to the requirements of the target group. These services must help businesses in the target group to maintain their focus on the primary process, which will contribute to increasing the likelihood of success.

Approach and realisation

The approach is geared to developing a total concept (organisation, actors and pricing) for the Service Boulevard,

- ... taking account of the primary needs of the target group of starters and restarters;
- ... taking account of the role that the existing parties on the Campus can play in this respect;
- ... responding to the need/requirement to ensure low-threshold access to the Service Boulevard portfolio – the Michelin Guide of services; and
- ... responding to the possible added value for starters and restarters in the region.

The Service Boulevard must be able to be put into operation immediately by means of this blueprint. This plan contains a process involving the following steps:

1. Forming a project team consisting of the most important stakeholders.
2. Finally adopting the strategic plan.
3. Survey and interviews.
4. Drawing up a preliminary memorandum.
5. Drawing up a framework policy document.
6. Detailing the framework policy document in a blueprint for the Service Boulevard.
7. Approval of the business model by Chemelot.

See also the Virtual Service Boulevard on this website.

8. Chemical Innovation Congress

Objective

Creating awareness among decision makers for the objectives and contents in the case of open chemical innovation. Limburg as a hub for open chemical innovation. It is important that the results of the CHEMaterials programme are disseminated across a broad public.

Approach

A one-day congress with a morning programme consisting of workshops including directly involved parties from the chemical industry cluster for generating recommendation to the decision makers in the afternoon.

Location: Sittard-Geleen or in the surroundings, preferably the Chemelot Campus.

9. Networking and Open Chemical Innovation

Objective

Linking various network initiatives to the Chemelot Campus and, via those networks, involving representatives in managerial positions from the equipment manufacturing sector, the engineering and contracting industry, chemical producers and processors of chemical products (SME and large companies).

Approach

The occasional involvement of the following networks in activities and/or parts of the CHEMaterials programme.

Networks of knowledge centres (University of Maastricht, Dutch Polymer Institute, TNO, Eindhoven University of Technology, Rheinische-Westfälische Technische Hochschule Aachen) involved in material development. These knowledge centres may be involved in the case of Pieken in de Delta [Peaks in the Delta] projects and INTERREG IV requests.

The European Chemical Regions Network (ECRN).

Initiatives such as CarePro, Digi-kring, Marketing Circle and the Syntens IBIS project.

Members of MKB-Limburg [SME Limburg] and the Limburg Employers' Association (LWV).

NanoHouse, NanoClub, LifetecZONE and ifeTecA2.

10. Chemelot Colloquium

Objective

Involving knowledge workers in the south-east Netherlands in matters involving knowledge workers at the Chemelot Campus. This part of the project therefore focuses on knowledge exchange between knowledge workers on and outside the Campus. This may involve both generic subjects and technical-substantive activities generated on the Campus.

Approach

Presentations of knowledge workers who transfer knowledge based on their work experience and enterprise. The focus will be on content and outlook. Creating a public and podium for subjects such as:

- Process control for quality.
- Symphase, barriere properties in packaging.
- Cradle to Cradle design tools.
- Bio-based performance materials.
- Theory of Inventive Problem Solving (TRIZ).

The informal setting is also important and there is a free format. The content is geared towards the partners on the Campus and the current events. The setting also offers the opportunity for subsequent discussion. There is also coordination with the Nanocafe and the Chemcafe.

11. Smart regions for powerful clusters

Context

The targeted closing of the innovation gap, particularly for the innovation topics for which social objectives have been formulated within the smart regions (including in the Province of Limburg Acceleration agenda) where powerful clusters are present within the region.



Objective

Organising chemical innovation by creating focus, reinforcement and cohesion. This will take place by challenging education and knowledge centres to produce innovative solutions and new materials. Linking SMEs with these knowledge centres and with other SMEs or large companies is also an objective for this part of the project. A further aim is research by companies into new materials in cooperation with knowledge centres.

Approach

In the first instance, the objectives for the innovation themes are listed. An assessment is then made via back casting with various parties (public authorities, knowledge centres, large companies, banks, NV Industriebank LIOF, Chamber of Commerce, Syntens, etc.) of the innovations that are required and are likely to succeed in order to achieve the objectives. By means of workshops with SMEs and knowledge centres, consideration is given to the market requirements of SMEs which are in line with these objectives and whether these requirements can be met from within the knowledge centres and/or Chemelot. The cooperative ventures required in order to achieve the innovations will also be stipulated. Targeted interventions will be set out for the remaining blank areas for which there is no immediate need on the part of SMEs and/or where little knowledge is available at knowledge centres:

- Companies with the required competences and expertise will be mapped out.
- Knowledge and R&D centres with the required knowledge will be investigated.
- Companies will be linked to other companies and to knowledge centres and challenged to formulate innovation projects.

Realisation

This project part will be realised via the following steps:

- Analysis of the innovation themes on the basis of TNO analysis and the Acceleration agenda.
- Organising workshops with experts with sufficient breadth and depth from within various parties to make a strategic choice for two subjects per innovatiegebied [innovation area].
- Organising workshops (Bono sessions) with experts to investigate the selected subjects in greater detail.
- Selecting and linking entrepreneurs via thinking and acting interventions.
- Creating cooperative ventures by exchanging knowledge on the basis of SKIP sessions (see also projectonderdeel 6 [project component 6]).
- Mapping out subsidy possibilities.

5.2. Open Innovation

Introduction

What is Open Innovation?

“Open Innovation is the use of purposive inflows and outflows of knowledge to accelerate internal innovation, and expand the markets for external use of innovation, respectively.”

Chesbrough, Vanhaverbeke, West
(Open Innovation: Researching a New Paradigm (Oxford, 2006))

Open innovation - as opposed to closed innovation - focusing on collaboration and clustering between firms and research institutions. It provides enterprises and institutions the opportunity to use, in a world of widespread knowledge, not only its own research and development opportunities, but also those of others. In addition, their own inventions, for example, they do not use, can be brought out (eg through licensing, joint venture programs, spin-offs). Also they have the opportunity to focus more on its core competencies.

Often, large companies core / trigger of an open innovation network.

In contrast, closed innovation is often the practice of SME's and hence from the government of Limburg open innovation is stimulated.

The Logic of “Open Innovation”

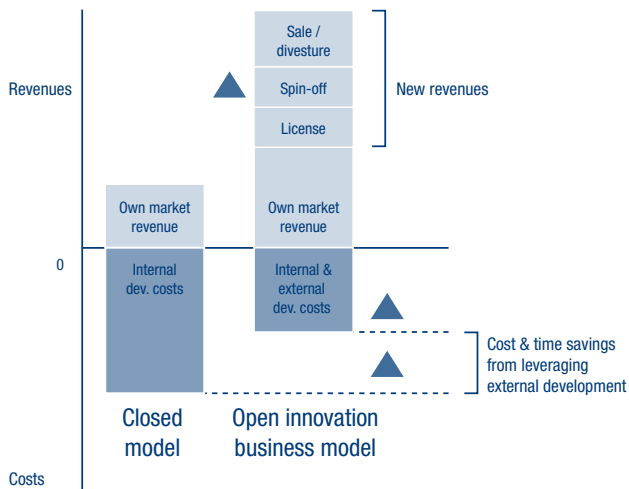
- Good ideas are widely distributed today. We must find and tap into the knowledge and expertise of bright individuals outside our company.
- External R&D can create significant value; internal R&D is needed to claim some portion of that value.
- We don't have to originate the research in order to profit from it
- Building a better business model is better than getting to be market first.
- If we make the best use of internal *and* external ideas, we will win.
- We must manage IP in order to manage research:
 - need to access external IP to fuel our business model
 - need to profit from our own IP in others' business model

Source: H. Chesbrough. *Sloan Management Review*. Spring 2003

Open Innovation Model in Limburg

In the Dutch province of Limburg is no technical university situated, so technology transfer should be organised from the rest of the Netherlands (Eindhoven) or from across the border (ie. Aachen, Liege). For that reason Limburg has a long tradition in technology transfer from research centers of local (big) companies to SME's.

The new business model of open innovation



Chesbrough, H. (2006)

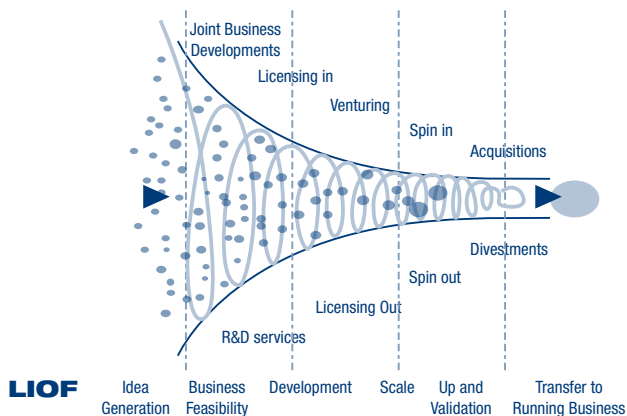


In the field of Chemistry one of those big companies in Limburg is DSM and they are, together with Sabic and several smaller companies, located at a large Chemical Site, called Chemelot. Recently the provincial government and Chemelot/DSM has signed a agreement for setting up a campus at Chemelot, together with the University of Maastricht (with a medicine-department).

The new campus will be active in the field of advanced materials, biobased materials ect.

The Innovation model

Open Innovation model

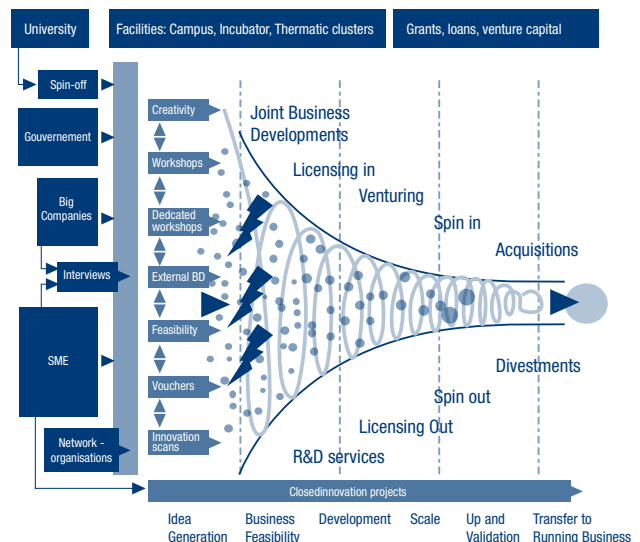
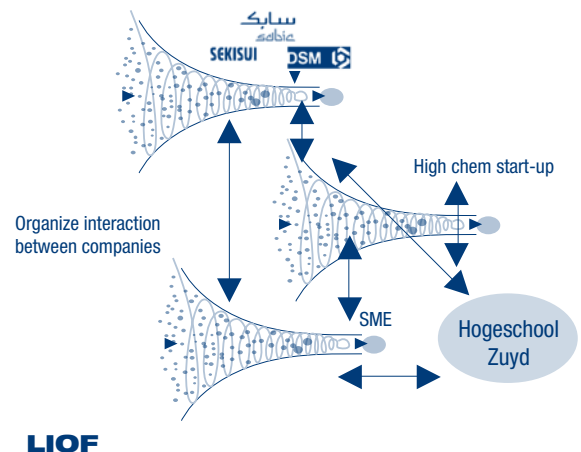


If the different "Open Innovation Systems", within a region, are combined, like in left figure, the relation between the different systems, and individual companies and institutes can be shown.

Within this model several big companies, SME's, universities and institutes can be involved.

If the different Open Innovation funnels are combined into one big regional funnel a regional open Innovation policy model can be determinate, like shown in the figure below.

Open Chemical Innovation on a regional level





Open Innovation policy

Inside this Regional Open Innovation Policy the following components can be determinate:

Idea generation: the main problem within innovation policies is how to find good projects and business opportunities. Within the regional open innovation model we did develop the following activities:

- Interviews with leading (innovative) companies and institutes to look for important trends and promising technology-developments.
- Creativity sessions, where groups of entrepreneurs are stimulated, at a structural way, to think, without restrictions, about new products and market opportunities.
- Workshops for informing companies and discussions about potential developments
- Dedicated workshops; presentation of specific items, related with the focus to form concrete innovation projects.
- External Business Developer: (external) experienced specialist to help companies and institutes with the transfer from project lead into concrete innovation project.
- Feasibility studies: to support the project development and check/concrete the expected project results.
- Innovation vouchers: fast searches for answers at (technology) questions.
- Innovation scans: structural scan for innovation possibilities within a company.

Business feasibility: Specific activities are:

- Joint business development: Collaboration between external business parties (customers, suppliers, competitors), aimed at a specific goal, sharing risk and results, using each others complementary expertise.
- R&D services: R&D units provide services to 3rd parties, based on the unit's built up experience and know how.

Development: Specific activities are:

- Licensing in: is used to obtain IP that is interesting to develop new business.
- Licensing out: is used to leverage IP in order to create strategic and financial value.
- Venturing: Investing in start-up companies, having an interesting fit with companies' technologies or markets, with the aim to shorten the time to market. In this way specific technologies can be absorbed or specific markets can be opened.

Scale and validation; Specific activities are:

- Spin in: Small start-up companies that are sold off by other companies, or which have been identified or in which investments have already been made can be spun in if their technology or market is of special interest.
- Spin out: After the development phase of a project, a start-up company is established to develop the business further. After evaluation a decision is made to continue or to spin out the company.

- Acquisitions: acquisitions are a major route to realize the business and strategies.
- Divestments.

Transfer to running business: responsibility of the involved companies.

Infrastructure

Facilities like Campus, Incubator, thematic clusters.

€ -funds for grants, loans, venture capital.

Best Practices:

To explain the Regional Open Innovation Policy it is good to present best practices.

In most region's a lot of the components of the Regional Open Innovation Policy are already available and it's interesting to exchange these components and the results and experiences (best practices).

It's also interesting to present concrete best practices, where companies are involved.

Best practices (components):

The best practice in Limburg concerning the components of the Regional Open Innovation policy are shown in next table:

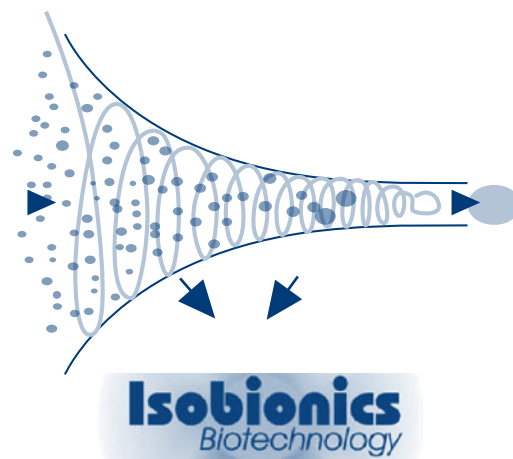
	LIOF	Merit	Province	EFRO	DSM	Interreg	L / D
Best practices	Account-management	Easy2clean antibacterial Venture fund	Strategisch Innoveren	Koersvast Innovation fund	I-zone Kennis-scheques	Resolve Chemelot	TTC Cross-Roads Automotive-net Limburg Venture
Idea generation:							
Interviews	X					X	
Creativity sessions			X				
Workshops	X			X		X	X
Dedicated workshops;	X			X		X	X
External Business Developer:						X	X
Feasibility studies				X		X	
Innovation vouchers						X	
Innovation scans		X		X			
Business feasibility:							
Joint business development					X		
R&D services:							
Development:							
Licensing in							
Licensing out							
Venturing		X		X			X
Scale and validation;							
Spin in:							
Spin out:							
Acquisitions							
Divestments							
Transfer to running business:							
Infrastructure							
Facilities						X	
€ -funds		X		X			X

Best practices (companies):

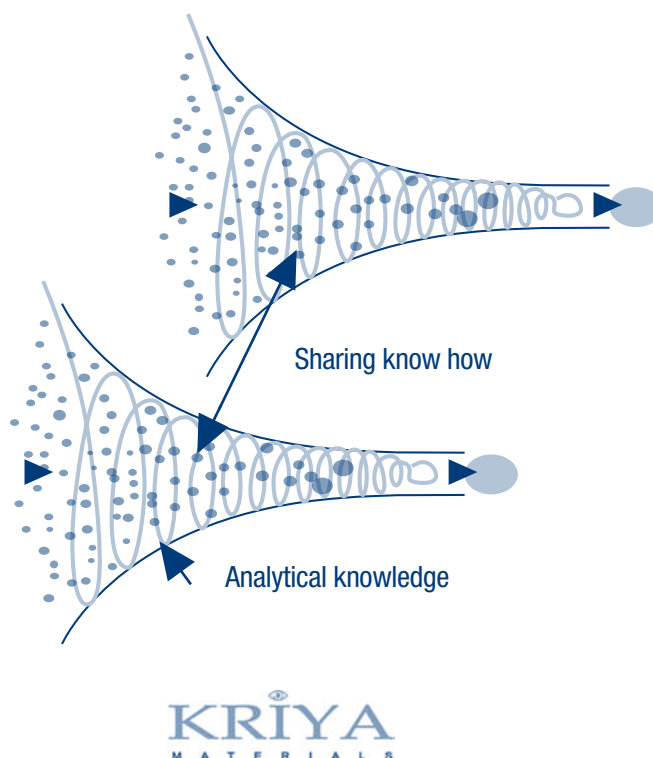
Examples of best practices at a company level are shown in the next figures:

Isobionics, Why Chemelot?

- Initiated by Chemelot and DSM
- License from DSM > access to key technology (Kaiser-saugst, Delft, Geleen)
- Access to market via DSM's global network
- Contracting of key DSM R&D resources
- Open innovation model at Chemelot Campus
- Active regional venture capitalist participation: Limburg Ventures + LIOF

**Kriya Materials, Why Chemelot?**

- Proximity of (potential) customers
- Application know how DSM and Sabic (co-development)
- Environmental permit
- High end service providers
 - Patent support
 - Analytical support (Resolve)
- Flexible housing
- Outsourcing possibilities of non core activities
- Lease of equipment on daily base: R&D and pilot line (cyanide)





5.3. "Mazovian Innovator" Contest



Mazovian Innovator

The idea of the Mazovian Innovator competition emerged during work on the Regional Innovation Strategy for Mazovia - the RIS Mazovia project. While analysing the situation of the region, the province authorities became confident that it is necessary to promote cooperation between science and business. During work on the strategy objectives, business people and scientists spoke favourably about the competition. The Mazovian Innovator competition is designed to promote the best practices among young scientists and the business community of Mazovia province.

Young Innovative Firm

The Young Innovative Firm category is intended for small and medium enterprises operating in Mazovia for no longer than seven years. Firms applying for the award have to prove that in the past three years they have introduced an innovative product, service or technology used in their daily business practice. The entrants in this category are mod-

"Highly developed regions in Europe and elsewhere in the world see a huge potential in the appropriate management of innovation. We are also aware of the importance of innovation in economic development and, consequently, in the general development of the province. This is why we promote innovative ideas and solutions, and grant awards to people who are not afraid to overcome stagnation." says ADAM STRUZYK, Chairman of Mazovia Province.

ern businesses, which in many cases work on a daily basis with R&D institutions, scientific centres and technology parks, conduct research and development activity, use innovative methods and tools in marketing and business management, and hold trademarks, certificates and national and foreign patents.

In the First Competition awards went to:

First Place: Creetech Sp. z o.o., a company dealing with new technologies, in particular the electronic components of digital cameras used in astronomical research;

Second Place: NewCon10T Sp. z o.o., a company running an Internet platform providing access to the main streets of several Polish cities with shops and services; the platform enables users to browse through products offered by the shops and buy them.

In the Second Competition awards went to:

First Place: AB Industry SA, for a new service which enables monitoring and optimising the usage of utilities.

AB Industry SA specialises in industrial automation, production management systems, robotics, electrical wiring systems and building automation. The award-winning product is a system for the management of utilities, like electricity, water, gas and steam. It enables the user to monitor their usage. As a result, the customer has full knowledge of their consumption and can optimise operating costs.

Second Place: Uniklon Integral Sp. z o.o., for a new product - an intelligent system for speech recognition and speech-to-text conversion. The award-winning product is called Magic Scribe Medical. It is the first and unique solution of this kind in Poland and Central and Eastern Europe.

Third Place: Genesis-Poland SC, for a new product - a radio alarm system with vehicle tracking. The award-winning product, used by the municipal bus service in Warsaw, has been developed by a consortium of Genesis-Poland SC, Wamechink Sp. z o.o. and MCX Sp. z o.o.

Young Innovative Scientist

Entries in the Young Innovative Scientist category are young creative scientists who have earned their doctoral degree in the past three years and have focused in their work on innovation which can be used in practice. The entrants are expected to show how their work could contribute to the development of the specific field of science. They are also expected to describe the main findings of their work and practical usefulness of their research pro-

ject, knowing that the jury will assess the degree of its innovation, usefulness for business and influence at regional, national and international level.

Last year awards in this category went to:

First Place: Aleksandra Anna Zasada: Evaluation of the Usefulness of Selected Chromosomal Markers for *Bacillus anthracis* Identification

Second Place: Zbigniew Piotrowski Effective method of watermark coding and decoding embedded in audio frequency band

Third Place: Michał Bieniek Substituted Hoveyda-Grubbs Catalysts - Activity Control and Applications in Olefin Metathesis

Third Place: Łukasz Topczewski Improvement and application of Grodnu penetrating radar non-destructive technique for the concrete bridge inspection

This year's winners:

First Place: Michał Kalita Solid polymeric electrolytes of increased cation transference number

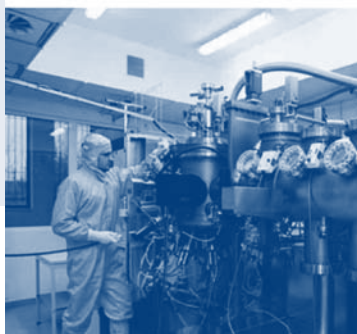
Second Place: Radosław Przysowa Rotor health assessment of turbojet engine based on Digital processing of blade-tip sensor signal. The award-winning work is focused on problems associated with using the digital measurement signal from the microwave sensors detecting blade movement to diagnose the rotor system of an engine. The research concerns problems which are very relevant today, as indicated by interest in the study

Being young and innovative, with know-how and plans for fast expansion well beyond the province and even the country, we were noticed by the competition organisers and won first place. This made us more confident and motivated us to undertake ambitious plans - even more ambitious than those we had thought about before the competition.

GRZEGORZ BRONA,
one of the owners of Creetech Sp. z o.o.,
the winner in the Young Innovative Firm category
in the First Competition.

Lithium batteries with a liquid electrolyte are used in cutting edge mobile phones and laptops. They are used equally frequently in pacemakers. They can also operate in extreme conditions, in particular in conditions of very high gravity load, for example in power sensors placed on rotating turbines, wheels or propellers. It has been proposed to use such a battery to power a module of a Mars lander. Recently, a very interesting solution is batteries for powering "intelligent" labels, which contain not only a relatively large amount of information about the product but also information about its use or storage. One can imagine that in this way we could register whether, say, a bottle of milk or a slab of meat has not been stored in an excessively high temperature.

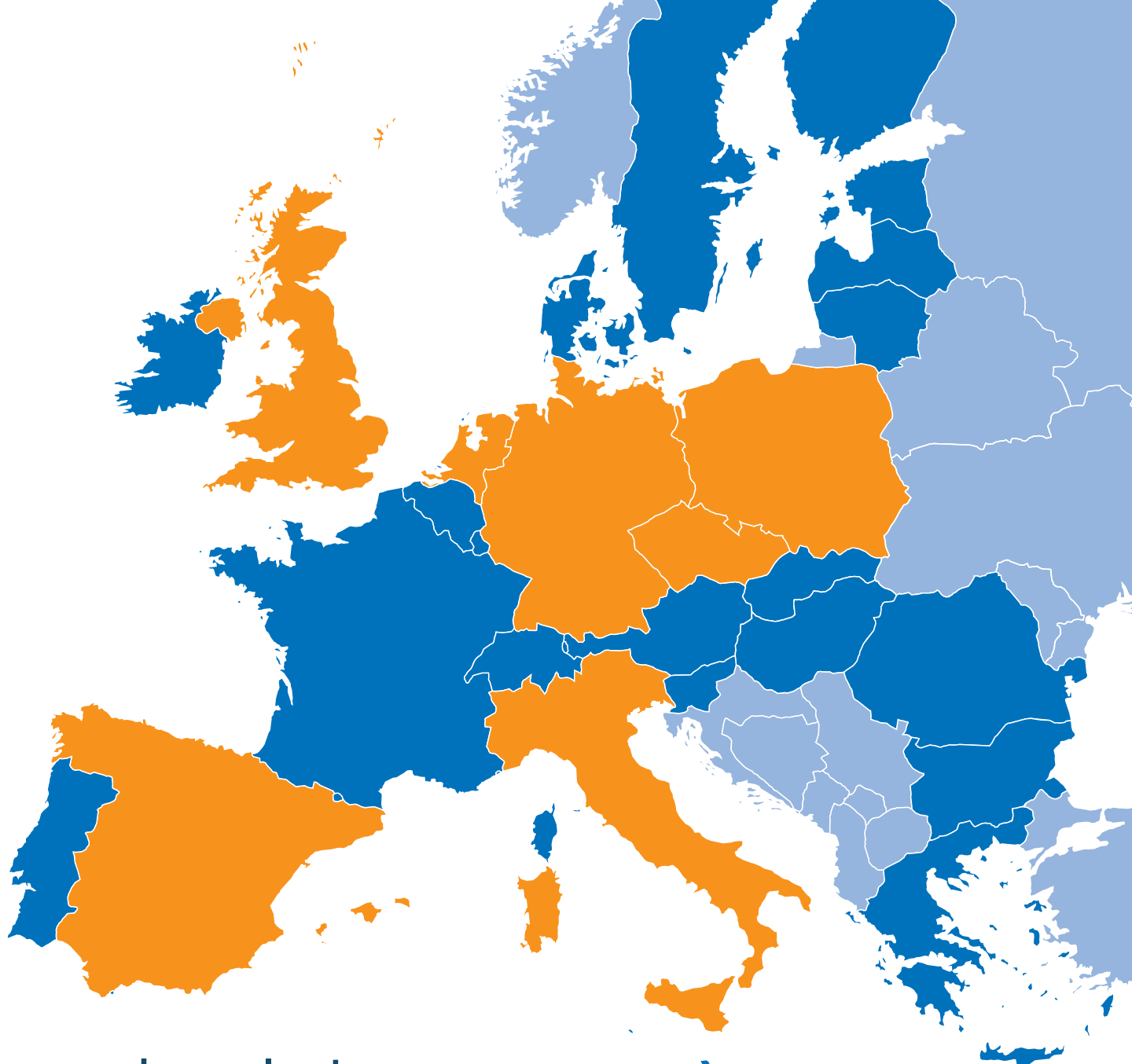
MICHAŁ KALITA,
the winner in the Young Innovative Scientist category
in this year's Competition.



from foreign organisations like Pratt&Whitney. Cooperation with the company resulted in five projects carried out as part of High Cycle Fatigue and Engine System Prognosis programmes conducted by the American agency DARPA.

Third Place: Ewa Monika Dumiszewska The influence of Gallium nitride nucleation layer on oxygen unintentional doping of gallium nitride buffer layer. The product of the research are epitaxial layers with properties comparable (electrical parameters, concentration of the dopant) and exceeding (dislocation density) the properties of layers achieved by other laboratories in the world. The research findings have been used in practice to optimise UV detectors.





www.chemclust.eu