



Chemical Cluster Development in European Regions

Final Implementation Report

Pilot Project “Skills Foresight”

July 2012

www.chemclust.eu



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1 Overview

The pilot project “Skills Foresight” has been implemented in the framework of the Interreg IVC project ChemClust from March 2011 until July 2012. Project Partners from Tees Valley Unlimited, Cheshire West and Chester Council, Province of Novara and Mazowieckie Voivodeship have discussed the future skills demand, ways of attracting younger people to work in the sector, and how to close any skills gaps that exist in the sector. The following partners have been involved:

Tees Valley Unlimited



Cheshire West and Chester Council



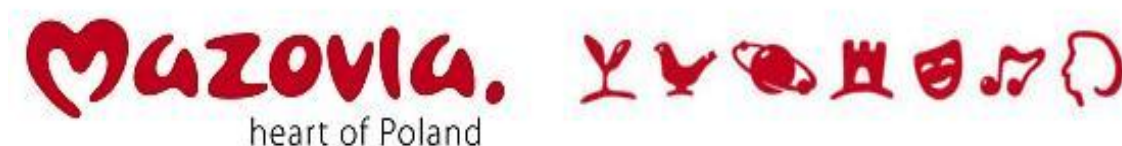
On behalf of TeesValley Unlimited and Chester West and Chester Council



Province of Novara



Mazowieckie Voivodeship



2. Objectives

The pilot project “Skills Foresight” has defined the following objectives:

- Improvement of innovation capacity of chemical companies by strengthening human resource development
- Exchange of experience about best practice solutions attracting interest of younger people to work in the chemical industry – improving the image and developing strategies to counteract the challenge of demographic change
- Matching future skills needs for innovative chemical production with current qualification strategies and activities – identifying future skills demand
- Support of initiation and implementation of concrete activities for the promotion of skills development in the partner regions in the framework of joint cooperation process
- Development of recommendations for the shaping of regional economic promotion and innovation policy for the strengthening of chemical parks as active driver of innovation development (e.g. voucher, roadmap, marketing, etc)

3 Thematic Priorities

3.1 Tees Valley Unlimited

3.1.1. Future Skills Demand

- Description of current skills provision (Companies, Government, Providers) Future Innovation areas
- Workshop in Tees Valley
- Prioritise 3 innovation areas for future studies (Key decision point)
- Determine skills for future innovation areas
- Recommendations to improve current system and integrate future skills needs
- Development new profession curricular or training modules for future identified innovation areas

3.1.2. Attracting Interest

- Describe and analyse current activity to encourage STEM¹ education – young children to university.
- Select best practice across age ranges of children and identify gaps
- Develop and agree recommendations for improvement of current activities and develop a progressive chain of interaction between children, educators, industry and providers.
- Initiation of focused progressive activities to attract young people to study STEM

3.1.3. Closing Skills Gap

- How is the skills gaps affecting industry now and impact of demographics
- Gaps in young people’s knowledge
- Up skilling of existing staff and route-ways of progression
- What will be the potential impact on the identified future innovation areas
- Exchange of best practice on reducing skills gaps

¹Science Technology Engineering Mathematics

- Develop strategies to deliver in-house training and establishment of two-way mentoring exchanges
- Develop recommendations for implementations

3.2 Cheshire West and Chester Council

3.2.1. Future Skills Demand

- Description of current skills provision (Companies, Government, Providers)
- Future Innovation areas
- Final Report Workshop
- Determine skills for future innovation areas

3.2.2. Attracting Interest

- Describe and analyse current activity to encourage STEM education
 - young children to university
 - Select best practice across age ranges of children and identify gaps
 - Initiation of focused progressive activities to attract young people to study STEM

3.2.3. Closing Skills Gap

- How is the skills gaps affecting industry now and impact of demographics
- Gaps in young people’s knowledge
- Up skilling of existing staff and route-ways of progression
- What will be the potential impact on the identified future innovation areas
- Exchange of best practice on reducing skills gaps

3.3 Province of Novara

3.3.1. Future Skills Demand

- Description of current skills provision (Companies, Government, Providers)
- Future Innovation areas
- Kick off workshop
- Determine skills for future innovation areas

3.3.2. Attracting Interest

- Describe and analyse current activity to encourage STEM education
 - young children to university
 - Select best practice across age ranges of children and identify gaps
 - Initiation of focused progressive activities to attract young people to study STEM

3.3.3. Closing Skills Gap

- How is the skills gaps affecting industry now and impact of demographics
- Gaps in young people’s knowledge
- Up skilling of existing staff and route-ways of progression
- What will be the potential impact on the identified future innovation areas
- Exchange of best practice on reducing skills gaps

3.4 Mazowieckie Voivodeship

3.4.1. Future Skills Demand

- Description of current skills provision (Companies, Government, Providers)
- Future Innovation areas
- Kick off workshop
- Determine skills for future innovation areas

3.4.2. Attracting Interest

- Describe and analyse current activity to encourage STEM education
 - young children to university
 - Select best practice across age ranges of children and identify gaps
 - Initiation of focused progressive activities to attract young people to study STEM

3.4.3. Closing Skills Gap

- How is the skills gaps affecting industry now and impact of demographics
- Gaps in young people’s knowledge
- Up skilling of existing staff and route-ways of progression
- What will be the potential impact on the identified future innovation areas
- Exchange of best practice on reducing skills gaps

4 Implementation of concrete Activities

2011	
Jan Feb	Agreement on methodology and thematic priorities within the ChemClust Working Group
Mar	Presentation of methodology and thematic priorities during ChemClust Workshop in Novara, Italy 2-3 March 2011 Start of pilot projects
July	Teleconference: All partners involved – discussion regarding the kick off workshop arrangements and partner updates provided
Sep	Pilot Project Kick Off Workshop in Tees Valley (Tees Valley Unlimited, UK): <ul style="list-style-type: none"> • Presentation from Tees Valley/Cheshire - update • Presentation from Novara – update • Presentation from Mazovia – update • Discussions regarding next moves and work plan • Arrangements for the pilot action workshop in Mazovia
Nov	Presentation of activities during ChemClust Dissemination Conference and ChemClust Workshop in NRW on 14 November 2011 in Leverkusen Pilot Action Group meeting – Partner updates, next stages and actions
2012	
Feb	Pilot Project Workshop in Warsaw: <ul style="list-style-type: none"> • Presentations from Mazovia, Tees Valley and Cheshire and Novara on the developments of the pilot action • Discussions regarding common themes emerging and preliminary recommendations • Preparation of presentation for Workshop in March
March	Presentation of Results during ChemClust Workshop on 8 March in Warsaw
May	Study Visit to the Catalyst Centre in Widnes, Cheshire
June/July	Finalisation of activities and development of recommendations

5 Involved Stakeholders

Tees Valley Unlimited

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6 Achievements and Recommendations

Tees Valley and Cheshire West and Chester Council

Tees Valley and Cheshire West and Chester are locations that are recognised as hubs of chemical sector activity within the UK. Whilst these are geographical concentrations in different areas of the UK the sector operates at a national and international level. This drives a high degree of similarity in the issues and experiences of businesses and employers whether based in Tees Valley or Cheshire West and Chester. For this reason, issues and achievements identified in the research and discussed in the final report are often specific to the sector, rather than the two local areas of Tees Valley and Cheshire West and Chester, and therefore are replicated in each area. The main difference is therefore in the recommendations and actions followed in each area.

Achievements for Skills Foresight in Tees Valley

- The nature and characteristics of the chemical industry in the Tees Valley have been described quantitatively in terms of businesses, employment, demographics and type of role.
- Collecting of quantitative information on the range of skills required by the industry.
- Completing an online straw poll and interviews with careers advisors and course leaders.
- Promoting of the poll by key Universities and social media through the Science Council.
- Undertaking focus groups with local school children.
- Gathering information and knowledge from key regional stakeholders;
- Engaging with Universities and Colleges;
- Sharing of Information with members of the Tees Valley’s Employment, Learning and Skills group;

- Detailed discussions with stakeholders and partners in the skills foresight group around the progressive chain of interaction; and
- Completing a mapping exercise looking into the current resources and activities available which seek to help attract interest from young people towards the chemical sector

Recommendations

Tees Valley Unlimited (TVU) is the Local Enterprise Partnership (LEP) for the Tees Valley. It is a partnership of public, private and voluntary bodies which coordinates activities that are designed to improve the economic performance of the Tees Valley. A strong skills base is essential to underpin the Tees Valley economy and TVU has an Employment, Learning and Skills (ELS) Group. The ELS Group has led the development of an ELS Framework to gather collective views on the actions we need to undertake as a priority to ensure that we can meet the current and future needs of the industry for a workforce with the right level and range of skills. The findings and actions from this pilot action will then feed into the TVU Partnership Business Plan (Objective 3 – Developing the workforce of the Tees Valley). Findings from the ChemClust pilot action will be presented to the ELS Group and recommendations will be discussed.

- Tees Valley Unlimited will present the findings of the pilot action studies to a range of stakeholders including NEPIC, Cogent and NSAPI along with representatives of the Tees Valley ELS Group.
- Tees Valley Unlimited will develop the findings and recommendations into the chemical processing section of their Sector Skills Action Plan for the Tees Valley. In order for the recommendations from the pilot action to be taken forward TVU should work in collaboration with the regional chemical employer organisation, (NEPIC), Sector Skills Council (Cogent), key national and regional innovation and research agencies such as TSB, to set out the financial case to

businesses for investment in science, technical and personal skills at all levels. Furthermore, to ensure that the content and delivery mechanisms for skills provision are industry led, designed for the needs of the chemical industry in the Tees Valley, and contribute to an overall up-skilling of the local population.

- The results will be promoted amongst schools, colleges and universities in the region to ensure young people (from nursery to university) continue to benefit from interventions along the “progressive chain of interaction“ such as the visits and lectures promoted by Children Challenging Industry and ongoing support for schools to visit chemical plants. Local Chemical Sector business to engage more directly with neighboring schools by providing work place visits and science clubs etc.
- The Chemical Sector should work collaboratively to raise the profile of the apprenticeship opportunities in the regions.

Cheshire West and Chester Council**Achievements for Skills Foresight in Cheshire West and Chester Council**

- Collecting information and knowledge from key regional stakeholders;
- Engaging with universities and colleges;
- Promoting of ChemClust by local universities;
- Involving of local school students;
- Compilation of quantitative information on the range of skills required by the industry, businesses, employment, demographics and type of roles;
- Discussions with stakeholders and partners in the skills foresight group around the progressive chain of interaction;
- Completion of a mapping exercise into the current resources and activities available which seek to help attract interest from young people towards the chemical sector; and
- Gathering knowledge from Cogent (Sector Skills Council for UK) on apprenticeship programmes and Cogent Gold Standard

Recommendations

- Cheshire West and Chester Council will present the findings of the pilot action studies to a range of regional and sub-regional stakeholders involved in the chemical industry skills arena.
- These stakeholders will range from the cluster support organisations operating in the region, such as Chemicals Northwest and the Chemical Business Association, and the skills training providers such as COGENT (Chemical Sector Skills Council) and NSAPI, along with representatives of the regional universities and colleges, and also managers from the shared Cheshire Education service.
- The results will also be disseminated at a sub-regional event to be held in October 2012- with representatives to be invited from the above stakeholders meeting with local chemical companies in Cheshire and to discuss ways of using ChemClust best practices.

- Members of the Local Enterprise Partnership (LEP) will also be circulated with the ChemClust report, and, as the LEP has acknowledged, [given] the priority role that chemical manufacture plays in Cheshire and the sub-region, the recommendations will be given a prime position should the LEP decide to place national funding such as the Regional Growth Fund, and Growing Places. The LEP Board for Cheshire and Warrington has several senior chemical industry executive members, and therefore the aspiration is that the recommendations are given serious and on-going support.
- The COGENT Gold standard will be promoted as a means of up-skilling the current workforce, as the research suggests that a 5% increase in trained workers ends up with a near-commensurate in GVA (Gross Value Added). The LEP will also be asked to help promote the Technical Apprentice Service (TAS) in the sub-region to prominent employers, and also to ensure that funds, where appropriate, are directed appropriately in this area.
- Finally- the results will be promoted amongst the primary level educators to ensure the children in the primary school range continue to benefit from interventions along the “progressive chain of interaction”; such as the visits and lectures promoted by Children Challenging Industry and ongoing support for schools to visit chemical plants. A further recommendation would be to ensure all efforts should be maintained to assist the Catalyst Discovery Centre at Widnes to continue its activities for further generations of future scientists and chemists.
- The results will also inform discussion at the 4NW Leaders Board which covers the local authorities of NW England, and in turn the recommendations may form part of any new regional policies in this regard. It is hoped that as Cheshire West is a member of the EU Committee of the Regions that the findings of the ChemClust project will also be disseminated here at the appropriate time.

Province of Novara

Achievements for Skills Foresight in Province of Novara

- Learning of new and successful teaching methods from the experience of English partners.
- Convening local stakeholders groups to share outcomes from the Pilot Projects and attracting their interest towards new actions.
- Collecting previous experiences and requests from the local chemical companies, we came to a first individuation of the skills and the professional profiles required this has been the starting base to develop our action at local level.
- Sending of questionnaire to companies and collection of precious data through the information and suggestions sent by the interested companies.
- Sharing of the information gathered with the local stakeholders and open debate to find out the best ways to address the need for new skills emerged from the interviews.
- Setting up and defining a new course with the Omar Institute on the topic “Chemical Formulation” by contacting and showing our proposal to the Italian ministry for Education.
- To sum up, a general improvement of the local training offer related to the chemical sector.

Recommendations

- Stimulate and better define the public financial support to companies hiring just graduated students and ensuring fair conditions of career to young and less experienced workers.
- Set up a more efficient Regional and National platform between schools and companies in order to Improve the current training offer in the Universities and high schools as often the skills needed by the companies are not properly tackled by the subjects taught. This platform should be able to communicate at European level, comparing best solutions adopted in other member States (as it happened during Skills Foresight PP though).

- Better addressing of funds supporting the creation of new and requested training courses both at national and European level, getting the resources closer to the real needs and allowing the setting up of new and innovative training paths.

Mazowieckie Voivodeship

Achievements for Skills Foresight in Mazowieckie Voivodeship

- Analysing the chemical industry and the labour market potential in Mazovia through desk-research, interviews and expert panels
- Identifying good practices worth attention and promotion of the cooperation between the chemical schools, functioning in the area, and the employers as well as the activity of Mazovian chemical schools within the promotion of the educational offer and the chemistry in general.
- Carrying out a pilot project in May 2012 under the working title "Industry for children (the name of the program: "Children Challenging Industry"), whose main purpose was to:
 - to improve the perception and understanding of children and teachers from Mazovia region chemical industry
 - chemical compounds with science,
 - encourage middle school students to learn science, especially chemistry.

Pilot project was implemented in five schools in the Mazowieckie voivodship and every meeting lasted for about 60 minutes. There were from 39 to 50 pupils in each group. The project not only helped to extend students' knowledge in chemistry, but also significantly influenced the perception of science, especially chemistry, as interesting and valuable.

- Mazovia region established cooperation with Warsaw Technical University chemistry department and started cooperation with the alumni association.
- Mazovia region organized brainstorming with experts from the local chemical industry, labour market institutions and education.
- Mazovia region shared the results of research “The *Chemical Industry in Mazovia...*” and opened the debate (two more meetings left).
- Mazovia region trained teachers and pupils from Mazovia middle schools to improve their understanding of chemical industry.

Recommendations

- The identified gap in the teaching of chemistry in schools is not very attractive form of knowledge transfer. Therefore additional classes in the form of experiences and experiments are recommended that perfectly complements the traditional methods of teaching and supporting teachers and students in the learning process.
- It is recommended to continue the implemented promotional activities and to support new ones, presenting the industry as one of the fastest-growing, important for economic growth the region. Promoting a cooperation network, existing cluster initiatives in order to stimulate the business sector, and supporting educational activities.
- In the promotion of the labour and education market, it is important to include in a support plan for the education sector the actions strategic for the development of the region and country.
- There should be a continuous monitoring of the labour and education market, with regard to the demand for workers and certain professions, and a support for the cooperation initiatives of vocational and technical schools and the employers, by using good practice indicated in this study.
- Also, the possibility of integrating the employers in the works on the educational offer should be considered, so that it was adapted to the labour market needs (to the projects such as the modernization of the vocational training system).
- Mazowieckie voivodship will promote the results of research and the establishment of chemical profiles of schools, classes Including chemistry and related science.
- Mazovia will development system of chemistry education, with special emphasis on increasing the number of hours of chemistry lessons, practical activities and practical skills of graduates.
- Mazovia will also take measures to promote the chemical science, by showing their practical aspect, the interest in experimental chemistry and indicating that it's a part of our life.

General Findings:

- Demand is particularly prevalent at the technician level in the regions
- Workers need to be multi-skilled e.g. time management, project management, team working skills
- Commercial, business to business and innovation management skills are important
- There are occupations/roles the industry needs that are not visible as career options
- Need to improve frameworks for technician level skills and training for graduate level and above, skills to be brought into alignment
- High importance to improve the image of the sector
- Operation excellence (to improve competitiveness of existing manufacturing), materials (to build upon a strong but diverse industrial base) and biotechnology (to capitalise upon emerging science) are areas of importance that will demand new or enhance skills.

General Recommendations:

- Develop stronger links between schools, colleges, universities and businesses/industry in order to improve the current training offer. There is a need for more direct engagement and better communication between schools, colleges, universities and industry and it is important that any solutions are led by employer demand. Any programmes/project designed need to be tailored specifically to the chemical industry. Therefore, providing young people and adults with the skills and qualifications needed for the opportunities available in the sector.
- There is a need for a range of solutions that encourage engagement with the chemical industry across all age groups. There are particular gaps in the supply of education and enrichment activities for children and young people. Solutions may include ensuring high quality careers information, advice and guidance is available; increasing the opportunities to experience the workplace; and raising interest in and changing the perceptions of the sector for parents.