



# **ECRN**

## **European Chemical Regions Network**

***ECRN Study of "Skills, Training and Education"***

[www.ecrn.net](http://www.ecrn.net)

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**c/o Representation of Saxony-Anhalt to the EU**

## *Starting Point*

(Petro-) Chemical Industry in Europe is clustered in a limited number of sites

- the chemical industry plays a dominant role in these regions

The chemical regions are faced with similar challenges:

- to find efficient way to implement EU legislation
- to support competitiveness of the chemical industry and therefore safeguarding the sustainable development of the chemical sites in the long run
- to exploit the new framework conditions in a most efficient way
- change of business structures and culture and globalisation

## *Joint Interests of Chemical Regions*

### **Chemical regions in Europe are affected by the EU regulations in a similar way**

The regional dimension of EU legislation is often only barely taken into account

Chemical regions must respond to the changing framework conditions in finding joint solutions on:

- **Skills, Training and Education,**
- Research and Development,
- Infra Structure Development, etc.





# Aims and Objectives of the ECRN

- Improving regional development strategies in Chemical regions
- Maintaining competitiveness by fostering European co-operation of regional actors
- Developing a European partnership of regional partnerships in Chemical regions
- Articulating common interests of Chemical regions towards the European institutions
- Recognizing the European Chemical Regions Network as a genuine stakeholder in the future debate on Chemical policy

# Recognition of the ECRN as the stakeholder to represent the chemical regions vis-à-vis the European Commission



EUROPEAN COMMISSION  
ENTERPRISE AND INDUSTRY DIRECTORATE-GENERAL  
Chemicals, Metals, Forest-based & Textile Industries  
Director

Brussels, 20. 08. 2007  
ENTR/G/D(2007) 27859

Dr. Reiner Haseloff  
Präsident des Netzwerks der  
Europäischen Chemieregionen  
c/o Ministerium für Wirtschaft und  
Arbeit des Landes Sachsen-Anhalt  
Hasselbachstraße 4  
D - 39104 Magdeburg

**Subject: High Level Group on the competitiveness of the European Chemicals Industry**  
First meeting on 10 September, 2007 at 14:00 h

Dear Dr. Haseloff,

As announced in the invitation of Vice President Verheugen of 23 July 2007 the first meeting of the High Level Group on the competitiveness of the chemicals industry will take place on Monday, 10 September 2007 at 2 p.m. in Brussels in the Robert Schuman meeting room of the Berlaymont building of the European Commission (address: rue de la Loi 200, see attached map for further details).

Please find enclosed to this letter the agenda and the meeting documents. The main subject of the meeting will be the establishment of the work programme for the Group based on a discussion of the thoughtstarter on the state of the European chemicals industry and of the competitive challenges it faces, as well as your expectations about what the Group should accomplish. Most of the meeting time is allocated to this discussion and we would invite you to contribute actively and to share your views and experiences with the Group. To facilitate the discussions, interpretation into the three working languages of the Commission (English, French, German) will be provided. However, I should inform you that the general working language of the Group will be English and all documents will be produced in English only.

## ***Influencing EU Policies***

### **Success factors:**

- Defining joint interests between the regions (i.e. REACH)
- Engaging the stakeholders at regional level
- Developing strategic cooperations at EU level
- Defining the added value of the Network

### **Actions:**

- Participation at High Level Dialogue
- Participation in INTERNET Consultations (Climate, Innovation, Energy, etc.)
- Engaging EU Institutions in Network activities
- Focus on achievable results
- Concerted and coordinated efforts at all levels



# ***ECRN Study*** ***SKILLS, TRAINING AND EDUCATION***

## **Participating Regions:**

**UK North East**

**UK North West**

**Asturias (Spain)**

**Lombardy (Italy)**

**Piedmont (Italy)**

**UK Humber**

## **Co-ordinator Region:**

**UK Humberside and  
UK North East in cooperation with  
the Humber Chemical Focus and  
Tees Valley Joint Strategy Unit  
(TVJSU)**

***⇒ Part of the EU INTERREG IIIC funded  
programme in 2005 – 2006***

## *Objectives*

- **To collect information from the six participating regions to promote:**
  - **Understanding of how key skills issues affecting the chemical sector are identified and addressed**
  - **Sharing of information on key skills affecting each region**
- **Useful exchanges of best practice for all regions include those not involved in this study**

## ***Compared Interest Fields***

- 1. Characteristics of the chemical industry in each region**
- 2. Main skills problems in the regions**
- 3. Skills and training providers**
- 4. Identification of skills issues**
- 5. Examples of skills solutions**
- 6. Key future skills issues**

## Graduate Scientific Staff in this field

### - **Each region has some difficulty in recruiting science graduates**

- Chemists shortage acute in Italy
- Lombardy and Piedmont industries employ very large proportion of Italy's graduate chemists – speciality chemical/R&D sectors
- Graduates with specialist qualifications are especially difficult to recruit – formulation chemists
- Also a graduate chemist problem in UK, especially UK NW

### - **Reasons seen as**

- Falling numbers of science students and graduates
- Graduate (chemists) are much in demand in other non-chemical sectors – higher salaries available?
- A view that poor chemical industry image is a factor

## ***Graduate Engineers***

- A major problem in UK – all regions
- Mechanical engineering is a particular problem
- Serious fall in number of engineering graduates at Universities
- Very high competitive demand for engineers in construction and other engineering-linked industries
- The problem has worsened since this study

## ***Skilled Technicians***

### **Shortage of skilled technicians**

- Especially with engineering and laboratory skills
- UK problem currently appears the greatest
- In UK, difficulty in attracting school-leavers into technician training positions

### **Shortage of biotechnicians in areas where this sub-sector is growing**

- Mentioned especially by UK NE

## ***Present Staff Situation***

- Operating and engineering technology has been rapidly advancing without required staff 'up-skilling'
- Skills limitations are often also seen in non-technical behavioural skills eg communication, self-development
- Other areas see similar limitations eg in lack of foreign language abilities as industry develops internationally

### **Current skills issues**

- There is no single pattern which describes the skills problem for all regions
- The different features and history of the industry in each region determines the relative severity and importance of the skills issues faced locally
- However there are some common factors across all the regions participating



THE MAIN SKILLS PROBLEMS

TABLE 2

SECTION 2 RESPONSES SUMMARY – THE MAIN SKILLS PROBLEMS IN THE REGION

Question	ASTURIAS	LOMBARDY	PIEDMONT	UK HUMBERSIDE	UK NORTH WEST	UK NORTH EAST
2(a) Current staff shortages	Majority of companies experience difficulties in recruitment. Those that do not are usually ones whose work force is diminishing. No common pattern on the types of jobs, probably because of the varied nature of company activities in the region. Problems arise when companies need to recruit staff with previous experience, not available in the relatively small regional industry.	Lombardy suffers even more than the rest of Italy from a shortage of graduates. Fewer graduates matriculate while industry demand remains the same. Regional chemical industry takes 40-50% of Italian chemistry graduates while its Universities provide about 15% of Italian chemistry graduates. Mobility of talented staff is a problem in Italy.	Fewer graduates matriculating against steady demand for them from the industry. Some problems of mobility of most talented staff	Specific engineering staff, craft and electrical technicians; project managers	General shortage of staff with technical skills at levels 2 and 3 (technician).  Shortage of graduates with relevant skills, particularly in Science disciplines. Seen to be due to decreasing number of University students in science subjects, and chemical industry seen as a less desirable career option.	No major current shortages of staff, except engineering and construction for peak workload projects. Instrument technicians, particularly for laboratory work.  Some companies have difficulty in recruitment of certain categories eg chemical engineering graduates, skilled laboratory technicians, Qualified Persons for pharmaceutical roles.
2 (b) Present skills limitations	Shortage of professional training in specific skill areas eg languages.	Particular problems for R&D departments; for formulation chemists in speciality chemical companies; and in some non-technical areas eg marketing.	Particularly in R&D, marketing, patents and management functions	General management skills in SMEs Basic technical, craft and electrical technician skills	Skill levels of existing staff are seen to be limiting performance in 60% of companies. In many cases these limitations are in personal skills eg communication, self-development etc rather than job-content-related.	There is a need to increase the skill levels of several job categories eg production technicians and some engineering craftsmen to handle the developing technology of the industry.



## THE MAIN SKILLS PROBLEMS

**TABLE 2 (continued): SECTION 2 RESPONSES SUMMARY – THE MAIN SKILLS PROBLEMS IN THE REGION**

2 (c) Forecast skills shortages	Lack of staff for the next year is not foreseen in most cases. Only in an area where growth is foreseen (biodiesel) are new requirements predicted.	Expect current trends to continue. Triennial degree courses (more general, established for 3 years) may partly help if training is designed to follow industry needs	Expect current trends to continue. New triennial degree courses may partly help if training is useful for industry needs	Higher demand in engineering service sector predicted for the future because of aging workforce. Present skills limitation expected to worsen.	Skills shortages seen as continuing in the future unless action is taken.	Likely to be shortage of engineering technicians. Shortage of staff for biotechnology sector's continued growth.
2 (d) Age profiles	The average age of all employees ranges from 35 to 44 years in different sizes of company. Almost all employees are between 25 and 50	No information available. Ad hoc studies needed	No information available	Workforce survey in engineering service sector showed aging population with low intake of young people, leading to forecasts of major shortages in future.	Comprehensive survey across the chemical sector showed that most of the workforce is in age-range 35 – 55 with too few employees aged below 30. Engineering service companies not included in this survey but similar picture anticipated.	Age profile studies have been carried out for certain groups of employees though no comprehensive survey for all groups has been done. Studies often show an aging population with small number of young people recruited.
2 (e) Young people recruitment	Large and medium companies – no problems except in one case. Small and almost all micro-companies have difficulties, though their requirements for recruits with experience may account for this.	Fewer matriculations in all scientific subjects. Tight labour market in Milan gives many opportunities. Highly skilled graduates often do not see SMEs as attractive employment opportunities.	Fewer matriculations in all scientific subjects. Tight labour market gives many opportunities. Highly skilled graduates often do not see SMEs as attractive employment opportunities.	Difficulties in attracting applications from school-leavers of the best quality for apprenticeships, Basic maths and science standards are often lacking.	There has been little recruiting in recent times. When this has been done, older people from other companies have been recruited rather than new intakes of young people to the industry.	Some difficulty in attracting well qualified school-leavers into apprenticeships for engineering or production technician training. Nationally the numbers of science graduates is falling and difficulty of attracting them into the industry is increasing.

## ***Staff shortages - general***

- **Chemical sector down-sizing and previous lack of recruitment may be a factor in disguising shortages until recently**
- **Areas with smaller chemical sectors suffer from difficulty in recruiting people with specialist skills**
  - A smaller 'pool' to recruit from within the region
- **Issues vary with size of company**
  - Recruitment often easier for large companies, acute for SMEs
- **Companies often want recruits with specialised experience**
  - Problem is not always a shortage of graduates!

### **The future predicts a gap, since**

- Present priorities are dealing with known skills shortages and issues
- Little work is being done to forecast future changes in the nature of the industry and the new skills and education needs that will result
- Average employee age of 40,5 years may result in an upcoming work force shortage

# ***Current Skills and Training Provision***

## **1. Universities**

- Universities responding to the needs of industry in the emergence of more specialised training in the form of Masters Degrees in subjects of direct industrial relevance

## **2. Technical Training**

- Training for technicians is provided in each region by training through colleges or high schools, and most of this appears to be carried out within each local region
- practically-based training in colleges of Further Education and Industrial Technical Training organisations

## **3. Private Sector Training Providers**

- Company in-house training is an important resource, in the Italian and UK regions, in the former sometimes with ESF funding support and advice from Federchimica

## **4. Regional and National Government Agency Involvement**

- Local agencies and ESF co- funding
- Regional Development Agencies (RDAs), UK

## ***Efficiency of the Market***

- Too few young people seem to be choosing educational routes that will lead them to the chemical industry
- The Industry does not seem to be communicating directly with the graduates to persuade them to do so
- The strongest links are via Universities or Educationalists – but no region appeared satisfied that these links are effective enough
- Larger proportion of the workforce in the age-range 35 to 55 (or higher), and few employees aged below 30, expected to cause serious staff shortages in a few years' time as retirement age is reached for the significant number of older employees
- Lower than desirable skill levels of older employees, who may lack educational and training qualifications

## ***Skills, Training and Education – How can ECRN promote progress ?***

### **Possible further collaborative ECRN projects are**

- Prediction of future industry developments and skills needs
  - Identify possible future industry developments regionally
  - Forecast the skills and training needs that these developments will require
  
- Encouragement of graduates into science and industry
- Exchange of practice on systems for learning related to the Chemical Industry – perhaps joint development of training projects

**Thank you for your attention!**