

Vision Paper for a Technology Platform

Safety for Sustainable European Industry Growth

According to European Statistics¹, in EU-15, because of an accident at work one worker becomes a victim every 5 seconds and one worker dies every two hours. In 2001, this means **7.6 million accidents at work**, 4.9 million of these resulted in more than 3 days of absence from work, and **4 900 fatalities**. The cost of accidents at work and occupational diseases in EU 15 ranges for most countries from 2.6 to 3.8% of Gross National Product (GNP). Additionally, in 2002 in new EU member states were almost 2.5 million accidents at work and 1 400 fatalities were recorded.²

Besides the accidents at work, major accidents take place resulting in extensive consequences to people, environment and the property. A major accident such as the Toulouse disaster on 21st September 2001 resulted in 1 500 million € of damages, 27 000 homes and 1 300 companies damaged. The explosion killed 30 people (21 on site with 10 employees and 11 sub-contractors, 9 off-site), 2 242 were injured (officially), and 5 000 persons have been treated for acute stress... This disaster has upset the public, traumatised an industrial city and led the politicians to close down the AZF plant (450 direct jobs) and the SNPE phosgene related activities (492 jobs, 600 sub-contracting jobs).

According to the MARS database³, about **30 major accidents happen each year**. By definition these accidents had the potential for major consequences to people and the environment. Fortunately, many of them do not have such serious effects, but they do have serious economic impacts for industry and for the communities which rely on them for employment. Thus they disrupt the process of sustainable industrial development, directly through the immediate response of the community and indirectly through restrictions placed on the whole industry as a result of these failures. Moreover, the development of modern technologies brings about many new industrial safety issues. New production technologies are sometimes accompanied by new, hardly foreseeable hazards, however providing at the same time new cost-effective and time efficient solutions to the occupational accident and disease prevention problem. Developing synergies centred on risk control paves the best way for effective exploitation of those possibilities both in improvement of the current situation and in prevention of new risks.

Conscious of the stakes and progress margins, a high level group from industry, unions, authorities, NGOs, banks, insurance and researchers has undertaken to create a **technology platform** to achieve *safety for sustainable European industry growth*. This initiative, which immediately obtained the support in principle of the DG Employment, DG Enterprise, DG Environment and DG Research, aims at preparing a strategic vision of the priority research in industrial safety and to implement a detail actions plan as soon as the 7th Framework Programme of the European Commission is launched.

¹ Eurostat, Work and health in the EU, A statistical portrait, Data 1994–2002 (2004), ISBN 92-894-7006-2

² Accident and disease information, International Labor Organisation, <http://www.ilo.org>

³ Major accident reporting system. European Commission, Joint Research Centre, Ispra. <http://mahbsrv.jrc.it>
Accident database where major accident (according to the criteria defined in the 96/82/EC Seveso Directive) are reported.

Then, as an overall goal, improvement of industrial safety will promote the competitiveness of the European industry, which is today facing up to the competition of emerging developing countries which have the in-built advantage of an expanding consumer market. Therefore, improved risk control supporting the sustainable growth of the European industry needs a co-ordinated effort in research. Many of the most respected risk assessment and control methodologies have originated or been developed in Europe. Examples include Hazard and Operability Study (HAZOP), Quantitative Risk Assessment (QRA). Work continues in the field to develop further. However, this lacks formal coordination and targeted resource funding and is somewhat fragmented. It urges new means of networking, further improved regulations, access to new technologies provided by research.

Of course, there is a need of co-ordinated production of new knowledge, methodologies and processes, but improvement of industrial safety will also occur by a better transfer of existing knowledge towards the companies notably the Small and Medium Enterprise (SME) sector and the newest members of the European Union, better training and education of all the actors concerned by the environmental and professional risks, and by the development of an 'incident elimination' culture.

The technology platform will intensify networking and stimulate technological and organisational improvement in risk management. It will be achieved thanks to a commonly agreed research agenda, but also by working on education, standardisation, transfer to industry and thanks to strong interactions with other TP concerned by risk issues (e.g. Sustainable Chemistry, Hydrogen...). To create solid links and functioning networks and to engage with all stakeholders in the field of health and safety of the workers, protection of the environment and the prevention of major accidents, constitutes an ambitious challenge. The improvement of the situation will be **benefit to European citizens, to industrial companies and to workers of several industrial sectors** (processes, chemistry, manufacturing industry, construction...).

The technology platform in industrial safety will be **transversal** and will have an impact on several other technology platforms which will be able to optimise the risks taken in business opportunities. As this vision translates into a charter and detailed objectives, firm, measurable goals and 'milestones' will be defined to ensure that real gains are made and can be identified as outcomes of the Technology Platform. It will significantly contribute to a **sustainable growth of the European industry**.

The vision for future industrial systems can be summarised as follows.

By 2020, industrial safety shall have progressively improved (by a 25 %)⁴ in terms of reduction of accidents and diseases at work, control of environmental risks and in production losses due to accidents. It all will have contributed to keep the industrial systems in permanent and steady sustainable growth and ensure the transfer of knowledge to the industrial companies, SMEs in particular. It will have developed an "incident elimination" culture where safety is embedded in design, maintenance, operation and management at all levels in enterprises in everyday activities.

⁴ Several industrial organisations have been able to set and are close to achieving goals which reduced their incident rates for all Environment, Safety and Health performance by as much as 90% in the past 10 years.