ChemSkills

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ChemSkills Project Gears Up for Milan Conference as Next Phase Begins

Dear reader,

Welcome to this brand-new issue of the ChemSkills newsletter, which regularly updates you on the latest developments of the project.

Over the summer, the consortium held an online meeting to address key administrative and coordination aspects, ensuring a smooth path forward as we move into the next project phase. Our focus now turns to the months ahead, particularly October, when we will meet in Milan for our consortium meeting and public conference, a key moment to share preliminary results and engage with a broader audience.

Enjoy the reading, and stay tuned for more updates as we move forward on our journey toward a greener, more digital future for the chemical industry!

Best regards,

The ChemSkills project management team

Save the Date: ChemSkills Public Conference 2025

We are pleased to inform you that the ChemSkills Public Conference will take place on:

Date: Wednesday, 22 October 2025

Time: 09:30–13:00 CET

Location: Federchimica, Via Giovanni da Procida 11, Milan, Italy

Format: Hybrid (in person and online participation available)

The conference will bring together project partners, policymakers, education providers and industry stakeholders to discuss the role of skills in supporting the green and digital transition of the chemical sector.

Participants will hear early insights from the ChemSkills project, including updates on work packages, emerging training approaches, and examples of good practice from both education and industry.

Further details, including the agenda and registration information, will be shared in the upcoming weeks.

The First Results From Our Survey

As the European chemical sector undergoes rapid transformation driven by sustainability and digitalisation, the ChemSkills survey is capturing crucial information on the skills needed to stay ahead. Though the survey is still ongoing, initial responses provide a compelling snapshot of where the sector's priorities lie.

Across the board, general and specialised green and digital skills are rated highly. On a scale of 1 to 5, where 5 indicates "very important", the majority of the most frequently mentioned skills are scoring an average of **4.0 or higher**.

Key areas highlighted include:

- **Digital literacy and data interpretation**
- **Knowledge of sustainable chemical processes**
- **Competence in energy and resource efficiency**
- **Understanding of automation and process control**

This strong emphasis suggests that nearly **100% of respondents consistently rate core digital and green skills at the highest levels of importance.**

Beyond general abilities, respondents also rated the importance of more niche skill areas. A significant proportion (estimated at **over 80%**) place value on:

- **Digital modelling and simulation tools**
- **Circular economy principles**
- **AI applications in R&D and production**
- **Green chemistry innovations**

These findings underscore a sector preparing not only for operational shifts but also for strategic transformation.

When asked about training delivery, responses indicate a clear preference for:

- **Online modules,** allowing employees to train at their own pace.
- **On-the-job training,** which integrates learning with real-world practice.
- **Short-term formats,** such as micro-credentials and modular learning.

Approximately **60% of respondents prefer training that allows employees to be away for half a day or less**, with only a minority favouring full-day sessions. This points to a demand for **efficient, targeted upskilling** compatible with workplace realities.

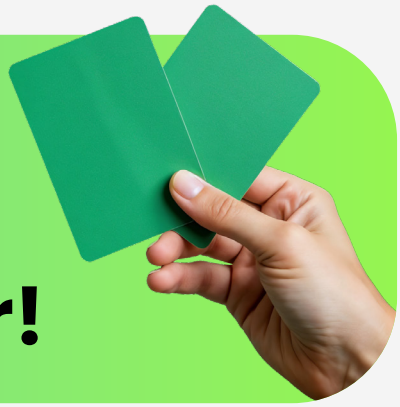
Initial results reveal that **time availability and operational continuity** are significant barriers to extensive training programmes. Many employers note that while upskilling is a priority, it must not disrupt production or ongoing responsibilities. Consequently, flexible formats are not just preferred—they are often necessary.

A substantial share of participants (around **one in three**) expressed a desire to receive follow-up insights and updates from our survey. This shows not only a high level of sector engagement, but also a recognition of the value in staying informed as the skill landscape evolves.

The survey remains open, anonymous, and easy to complete online.

To take part: **Click here!**

Explore Our Skillcards for the Future of the Chemical Sector!



We've just published the first **Skillcards** on our website, clear, visual summaries of key emerging roles in the chemical sector.

Each Skillcard highlights:

- **What the role involves**
- **Core skills and competences**
- **Why the role matters** for the industry's green and digital transition

The following skillcards are now available on the ChemSkills website:

Plastics Sector

- Eco-Design Engineer
- Sustainable Material Engineer

Consumer Chemicals Sector

- Analytics Translator

Fertilisers Sector

- Methods Modeller

Rubber Sector

- Waste Management Officer

Pharmaceuticals Sector

- Sustainable Process Development Chemist

Petrochemicals Sector

- Safe & Sustainable-by-Design (SSbD) Products Manager

Each profile plays a strategic role in supporting Europe's green transition, digital innovation, circular economy goals, and workforce modernisation.

Visit our website to explore the skillcards and see how the chemical sector is preparing for the future:

Click here!

Future Scenarios

Over the past few weeks, we've been working on a set of future scenarios to help anticipate how Europe's chemical industry might evolve under the influence of global pressures and emerging trends. These drafts are early, exploratory versions designed to spark dialogue and shape future skills development. What follows are two preliminary outlines, each focused on a specific strategic challenge.

Scenario: Attracting Talent

Shifts in global talent dynamics are reshaping the availability and movement of skilled professionals, particularly in science and technology. Europe's ambition to lead in fundamental research and key technologies hinges on its ability to remain an attractive destination for researchers, digital specialists, and high-value workers. However, growing competition from other global regions, especially Asia, and internal challenges faced by SMEs are creating pressure.

Key Impacts by Aspect

- **Ecosystem:**
  - Use of blockchain to monitor and verify carbon content across product lifecycles
  - Demand for robust knowledge in CO_2 footprint calculation and lifecycle management
- **Skills:**
  - Greater need for on-site training of operators, not just specialists
  - Emphasis on transversal skills and regulatory literacy across EU markets
- **Innovation:**
  - Integration of AI to optimise processes and predict maintenance
  - Emergence of Digital Twins and real-time sensor-driven systems
  - Push for bio-based products and new recycling methods
- **Regulation:**
  - Managing complex, evolving EU and national laws
  - Increased pressure to meet Safe and Sustainable by Design (SSbD) standards
  - Compliance with stringent EU environmental regulations
- **Politics:**
  - International push to share sustainable practices
  - Rising levels of cross-border relocation and professional mobility

Recommended Actions

- **At EU Level:**
  - Expand ERA Chairs programmes for underperforming regions
  - Simplify visa and residence procedures for researchers and families
  - Promote Europe globally as a top research destination
- **At National Level:**
  - Establish national talent coordination agencies (e.g. “Choose France”)
  - Invest in digital infrastructure, labs, and innovation hubs
- **At Industry Level:**
  - Develop public-private pipelines for PhDs and postdocs
  - Embrace hybrid and remote models to access global talent
  - Strengthen employer branding around values like sustainability and innovation

Scenario: The Critical Role of Chemicals in Defence

Triggered by geopolitical disruptions such as the Russian invasion of Ukraine, this scenario presents a Europe where the chemical industry becomes central to defence and national security strategies. Fragile supply chains, volatile energy markets, and growing strategic risks push the industry to prioritise autonomy and resilience over efficiency.

Key Impacts by Aspect

- **Technological:**
  - Drive for modular, autonomous production systems
  - Growing reliance on AI, automation, and secure digital tools
- **Economic:**
  - Cost pressures from raw material and energy dependencies
  - Reshoring becomes a priority to stabilise supply chains
  - Job creation in strategic areas vs. risks in vulnerable ones
- **Environmental:**
  - Emissions may rise from energy diversification under crisis
  - Green transition delayed but circular economy gains traction
- **Social:**
  - Acute need for lifelong learning and cross-disciplinary training
  - Demand for hybrid skills in supply chain, digital, and chemical domains
  - Public-private centres play a key role in workforce development

- **Legal/Political:**
  - Emergency legislation may bypass environmental protections
  - Faster regulatory mechanisms required
  - National mandates for production and stockpiling increase

Recommended Actions

- **Ecosystem-Level:**
  - Foster stakeholder partnerships across industry, academia, and government
  - Develop public-private training centres and risk-sharing networks
- **Industry-Level:**
  - Invest in modular production and secure AI systems
  - Ensure environmental safeguards remain in place, even during crises
- **Policy-Level:**
  - Recognise chemicals as a strategic sector in EU policy
  - Advance circular economy as a core resilience strategy
- **Education:**
  - Revise curricula to integrate digital, autonomy, and crisis skills
  - Boost STEM promotion and awareness of chemicals in national security

These scenarios are just the beginning. As we continue with our project we look forward to sharing richer narrative and detailed guidance tailored to different actors across the sector. Stay tuned.

Petrochemicals Europe Visits Delft University

to Present ChemSkills and Exchange with Future Talents on Skills for Industry Transformation

In June, Petrochemicals Europe visited Delft University of Technology in the Netherlands for an open exchange with students and professors about the future of the petrochemical sector, including on the topic of e-refining. The visit provided an opportunity to hear directly from the next generation of scientists and engineers about their views on the transformation of the industry, the key challenges ahead, and the skills they believe are essential for success in a climate-neutral and digital future.

The discussion focused on the industry's ongoing transition and how to better align skills development with industrial needs. Topics ranged from sustainability and innovation to circularity and digitalisation, highlighting the growing need for a versatile and multi-disciplinary workforce.

We are now working with Delft University to launch our survey and produce a written report that captures key takeaways from the exchange.

Twin Transition: The Skills Challenge for the Italian Chemical Industry

On Tuesday, May 20 Federchimica presented the ChemSkills project in the conference organized by the Chemicals, Rubber and Plastics Group of Confindustria Como, the Association of the main industrial companies of the Como Lake District.

The event was the occasion to explore the importance of people, training and life long learning in the digital and green transition in the italian chemical industry.
Today's labour market is facing crucial transformations and megatrends such as digitalization, the growing commitment of companies in the energy and environmental fields, along with the current geopolitical situation, confirm the importance of traditional scientific skills, increasingly supported by technology and automation. At the same time, soft skills such as cognitive, social, and communication skills are also gaining relevance.

According to the study “Emerging Skills and Roles for the Digital and Ecological Transition” conducted by the MEIEC - Milan Economic Impact Evaluation Center of the University of Milan, in partnership with Federchimica, the italian federation of the chemical industry, about 70% of companies in the italian chemical industry have already introduced or are in the process of introducing new professional roles with specific skills.

Emerging roles related to the digital transition include Automation and Robotics Engineers for manufacturing processes; Production Data Analyst e-Business Analytics Manager for data processing; Digital Campaign Manager and E-Key Account Manager for new communication channels and customer management; Innovation Leader and Digital Business Partner for change management. Life Cycle Assessment Specialist and Product Recycling and Reuse Specialists, Carbon Neutrality Manager and Sustainability Manager are particularly required for green transition.

Training provided by universities and VET for young people about to enter the workforce and life long learning for those already working, will be key to successfully managing the Twin Transition. Ongoing dialogue between industry and education stakeholders is essential.

"The chemical industry is based on science, which is why the topic of orientation and relations with schools is a priority. - declares Aram Manoukian, Federchimica's Vice President in charge of Education - Those who study chemistry have access to qualified professional paths, with much higher levels of schooling than the industrial average: in our companies, graduates are twice the percentage. In addition, 96% of employees have a permanent employment relationship and more than 30% of employees are involved in training annually. However, the sector is now experiencing increasing difficulties in staff recruitment: in 2022, more than 1/3 of planned new hires were found to be ‘hard to find’. This is a phenomenon that affects not only figures with a high degree of specialization, but also technical-operational figures (shift workers and production workers), leading to a widening gap between supply and demand.

In Chemistry we have an urgent need for vocations: it is necessary, therefore, to consolidate the collaborative relationship between school and companies in order to provide training programmes that are increasingly attractive and competitive, not forgetting that the job market is now on a global scale."

Our Upcoming Events...

Discover the Future Skills Needed in the Pharmaceutical Industry

Online Seminar, 15 September 2025

Join us on Monday, 15 September 2025, for a 90-minute online seminar via Teams, where we will explore the key skills the pharmaceutical industry will need by 2030. Together, we'll discuss trends, challenges, and how the workforce will evolve.

Date: Monday, 15 September 2025

Time: 14:00–15:30 CET

Location: Online via Teams (link will be sent upon registration)

Registration: Please register by Wednesday, 10 September by emailing kristina.svensson@ikem.se

ECRN online workshop "Circularity and New Materials"

Online Workshop, 23 September 2025

Join us on Tuesday 23 September for a two-hour workshop organised by the European Chemical Regions Network (ECRN). Together, we will explore the vital role of new materials and skills development in promoting sustainable innovation in chemical sciences and industrial practices.

The session will demonstrate how advanced materials, which are designed to be more sustainable, recyclable and environmentally compatible, are helping to drive Europe's green transition and support the EU's ambitious sustainability goals, including those set out in the forthcoming Circular Economy Act.

Date: Tuesday, 23 September 2025

Time: 10:00–12:00 CEST

Location: Online (link will be sent upon registration)

Registration: More information can be found via the following link:
https://ecrn.net/event/circularity-and-new-materials-workshop/

Stay tuned for more news...

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