

This is why Cefic has pushed “visionary projects” such as:

- The smart energy home – a cross-industry approach to the practical development of energy-saving home design and realisation, involving chemical companies, construction firms, engineers and architects.
- The F3 Factory – where the three Fs stand for Future, Fast and Flexible. The F3 Factory provides high-value, customised products made by smaller facilities and using intelligently-designed, scalable, adaptive processes with a minimal environmental footprint.
- Integrated bio-refineries – integrated clusters of processing units that make a range of valuable products from biomass and produce zero waste.

These projects have unlocked significant public funding from the EU. More “visionary projects” i.e. in the area of renewable feedstock and factory 2020 will follow. One of their characteristics is to involve companies from other industry sectors to achieve a full chain approach to innovation.

### Full chain approach to innovation - Integrated water management

Through Cefic, SusChem has recently developed official working relationships with other European Technology Platforms along the value chain, such as the Water Supply and Sanitation Technology Platform. This cooperation seeks to improve efficiency in the industrial use of water and promote joint industry contributions to safe, clean water supply for the general public in times of climate change. Implementation has started through joint research and technology development projects involving academics, research organisations and water users.

In all these projects, Cefic strives to create opportunities and involve its member companies as well as increase the participation of different actors in the value chain as re-emphasised in the HLG recommendations.

### The best brains

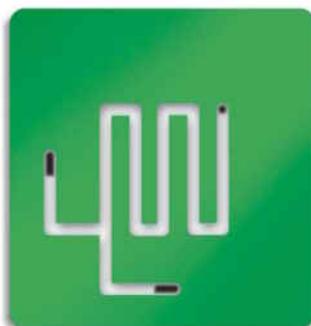
Innovation and its implementation, of course, require high quality human resources. Cefic has started a project to identify the skills needed by its members to meet innovation and sustainability

requirements. The results will serve as a basis to help tailor education at universities and schools.

We are also developing, together with youth, storylines to attract the best brains to the chemical sector.

This lack of skilled workers is a growing problem throughout Europe and needs to be high on the EU agenda.

The chemical industry, increasingly competing with other industries and the academic world, must develop the tools to attract students when they are choosing study and career paths.



### Contributing and accepted stakeholder

Broad acceptance of innovation by the general public is essential to the timely delivery of solutions and will frame the “societal climate” which the marketing of innovation will face in the next 5 to 10 years. Innovation is increasingly a major question mark related to change in society and new risks (i.e. biotechnology, nanomaterials, baby bottles).

Conducted under Cefic’s research and innovation agenda, such activities play a major role in positioning the chemical industry as both a valuable solution provider for society and a necessary stakeholder early on in the EU policy-making process.

Environment and its impact on health of society are important issues where the industry can demonstrate its value by enabling supply of clean air, clean water, safe food and combat climate change. Cooperating with international organisations such as WHO and OECD on issues such as 21<sup>st</sup> century risk assessment methods, children's health, health impact assessment, human bio-monitoring and indoor air quality, Cefic has been working closely with the European Commission, EU Council presidencies and government agencies like the US Environment Protection Agency (EPA) to ensure a reliable framework to evaluate innovation and to demonstrate the value of responsible innovation to establish the chemical industry as a solution provider.

### Tiny factories

Measuring a few 10s or 100s of microns, microreactors are being developed to replace existing, energy-hungry processes and applications: experimental reactors, chemical synthesis on demand and on the site of consumption, fast analytical devices and many more.

The same thinking has prompted Cefic to partly refocus its existing Long-range Research Initiative (LRI) to address the acceptance of emerging technologies and products in order to ensure future decision-making on innovation based on sound science. With the aim of participating as a partner in the early stages of new developments in risk assessment and environment and health research, the 10 year old LRI programme has been active in promoting those research areas that industry regards as important, networking with the scientific community and bundling global industry expertise. This commitment is still fit for a purpose in the next years and it provides a cornerstone in the ICCA Global Product Strategy (GPS) in close coordination with similar programmes in the US and Japan.