

Resource efficiency and the chemical industry

The European Commission published on 20 September 2011 its “Roadmap to a Resource Efficient Europe”.¹ As part of one of the seven flagship initiatives under the EU’s Europe 2020 strategy for smart, sustainable and inclusive growth², the roadmap sets out the EU’s policy framework on resource efficiency and proposes a pathway to action.

Resource efficiency is about doing more or better with less – delivering greater value with less input. In a world of finite resources with a rapidly growing population, efficient use of energy and natural resources is a crucial aspect of sustainable development.

The chemical industry plays a key role in building a resource-efficient Europe. The chemical industry has already made progress in decoupling resource use from production growth, but further improvements are needed. At the same time, chemicals serve as input into essentially all sectors: the chemical industry can thus provide products and materials and enable solutions that improve resource efficiency throughout the economy.

The chemical industry is committed to improving its resource efficiency

- **Resource efficiency is essential for the European chemical industry.**
 - The chemical industry uses energy and raw materials in many ways. Ensuring that these resources are used in an efficient, sustainable way is important for the competitiveness of our industry, for its customers and the end-users of its products.
 - The chemical industry is an energy-intensive industry, using coal, oil products, natural gas, electricity and renewables as raw materials – i.e. feedstock – and as power and fuel. The chemical industry accounts for 12 percent of total EU energy demand and for one third of EU industrial energy use (energy and feedstock).
 - Regarding other raw materials, the chemical industry uses a wide variety of natural and processed starting materials, including metals, minerals and agricultural raw materials such as sugar, starch and fats.
- **The chemical industry has made progress in improving its resource efficiency over the past years, in particular energy efficiency.**
 - Between 1990 and 2008, the EU chemical industry increased its production volume by 69 percent while keeping its energy consumption stable. Between 1995 and 2008, the EU chemical industry decreased its energy intensity (i.e. energy consumption per unit of production) on average by 4 percent per year, or by 41 percent in total.
 - Between 1990 and 2008, the chemical industry reduced its greenhouse gas emissions by 42 percent in absolute terms and by 66 percent per unit of production.
- **The chemical industry recognizes that further improvements are needed and engages in various initiatives to further enhance its resource efficiency, e.g.**
 - Industry-wide commitment to contribute to building a low-carbon economy and achieving the EU climate targets “20-20-20 by 2020”;
 - [Responsible Care](#) – the global chemical industry initiative to drive health, safety and environmental performance, open and transparent communication with stakeholders;

¹ EC Communication (Sept 2011): [Roadmap to a Resource Efficient Europe](#)

² EC Communication (Jan 2011): [A resource-efficient Europe – Flagship initiative under the Europe 2020 strategy](#)



- [CARE+](#) – a European project to help small and medium-sized enterprises improve their energy efficiency;
- Development of a public-private innovation partnership on resource efficiency for the process industry to optimise input resources (raw materials, renewable feedstock, energy, water), manufacturing processes, output materials (products, by-products, waste streams) and recovery options through advanced process technologies.

The chemical industry provides solutions for resource efficiency

- **The chemical industry develops products and materials and enables solutions that improve resource efficiency in other sectors and throughout the economy.**
 - Chemical innovation is at the roots of renewable energy technologies and energy efficiency in housing and mobility, and helps enable and commercialise renewable material use and the provision of clean drinking water, among other areas.
 - The chemical industry plays a key role in the shift towards a low-carbon economy. The global chemical sector currently delivers two tonnes of greenhouse gas savings for every tonne emitted in the production processes.³ The most important areas of emissions savings enabled by chemical industry products are thermal insulation, farming, lighting, transport, packaging, textiles and other consumer goods.
 - To enhance resource efficiency throughout the product life cycle, targeted life cycle analyses that span from raw materials to end of life and take into account the different dimensions of sustainability are essential. A holistic approach and cooperation with partners across the value chain are needed to advance sustainable production and consumption in the EU and globally.
- **The chemical industry is committed to working with EU and global partners to address resource challenges.**
 - The European chemical industry is ready to be a key partner for shaping the future European Innovation partnerships in areas with high impact on resource efficiency along the value chain, including water efficiency (integrated water management and treatment strategies), raw materials (more efficient extraction, recovery and substitution technologies for critical raw materials) and smart cities (new concepts for energy generation and storage, construction, transport and materials for smart living).
 - The chemical industry is committed to working with communities and stakeholders in the regions where it operates to conserve and protect biodiversity and promote the sustainable use of ecosystem services.
 - The European chemical industry proactively engages with its stakeholders on various European and global platforms, such as the [European Technology Platform for Sustainable Chemistry](#) (SusChem) and the Responsible Care initiative.

More information: www.cefic.org

³ [“Innovations for Greenhouse Gas Reductions: A life cycle quantification of carbon abatement solutions enabled by the chemical industry”](#) (ICCA, June 2009)