ECRN | European Chemical Regions Network

2020

PLASTICS AND CHEMICAL RECYCLING

ECRN VISION

OVERVIEW

Plastics are everywhere in our daily lives, bringing many economic and environmental benefits. Plastics are strong, durable and versatile materials. They enhance comfort, safety and hygiene. Using plastics packaging can increase the shelf life of products and reduce fuel costs in transportation of goods, helping to cut carbon emissions. All this has resulted in a huge surge in plastics production. Over the past fifty years, the global use of plastics has increased twentyfold and is still growing. It is expected to reach up to 1.2 billion tonnes annually by 2050.At the same time, plastic waste is increasingly becoming a global problem, as reuse and recycling of plastics have not kept pace. This is because many products and packaging types are not designed for reuse or effective recycling. In addition, collection, sorting and recycling are still underdeveloped. This means a significant proportion of our plastic waste is still being incinerated or goes to landfill, which negatively affect carbon emissions. Another part ends up as litter in our environment, where it may harm wildlife or degrade into potentially harmful microplastics. While all this valuable material is being wasted, the proportion of fossil fuel being used to produce new plastics continues to grow (from 6% of oil production now to an estimated 20% by 2050).

The first challenge is in it effective closing of the chain and optimal separating the different plastic waste streams so that they can serve as raw material again. The second challenge with plastic is to eliminate it fossil raw materials, of which almost all plastics are created. The third challenge is to provide biodegradable solutions for plastic applications, without causing it to break off harmful nano and microplastics. For all that getting a lot of innovation is still needed. Such advanced plans cannot be achieved without the support from the EU budget.

Reuse and chemical recycling contribute to the reduction of emissions, new chain collaborations, innovative manufacturing clusters, new type employment and economic opportunities. In addition, the design phase, eco-design, new business models and smart manufacturing processes and applications support the entire chain in the transition to a circular economy. It jointly creating awareness about what circular entrepreneurs can economically and socially delivery is essential. Both from the production process, revenue models, the life cycle of the product as well as from opportunities for it attracting new employees.

The future for sustainable plastics is in bio-based polymers. But the present is in enhancing recycling. Recycling will have the biggest impact in the near future. The technology for converting old plastics into new products via mechanical recycling is already well developed, while chemical recycling is developing fast. The next step is to add bio-based components to this process.

By the 2050, the European regions are going to be ranked among the top of the world in terms of the development of sustainable and advanced materials and innovative technologies that contribute to the circular economy. Examples include materials that are lightweight, nano-reinforced or biobased, and technologies such as clean technology, industrial biotechnology, 3D printing, and high-tech recycling, and all of these require engagement of chemical industry. **The ECRN members want to move quickly towards a closed plastic cycle in our regions. Processing of the plastic residual flows must be mechanical and chemical.**

Sustainable Chemical investments cannot just happen in every region, but will take place in the regions where the conditions are optimal for the specific business case of these investments. **The ECRN regions are already a home to a lot of biobased and circular initiatives and have considerable strengths, the next step is to more actively govern the creation of these value chains.** This can be realized by attracting/stimulating those initiatives which have the best chance to lead to commercial success in the region because they are built on the feedstock, infrastructure and local market of the region.

The regional scale level is the most appropriate as this is the level on which actors cooperate intensively with one another. It is, furthermore, important that regions fit in with the central government and EU's policy and instruments. At the level of the regions, the emphasis is on the further development of clusters, or the regional innovation ecosystems, and on the relationship between education and the labour market.

ECRN PRIORITIES

- The ECRN members welcome the European Strategy for Plastics in a Circular Economy [COM(2018) 28 final]that lays the foundations to a new plastics economy, where the design and production of plastics and plastic products fully respect reuse, repair and recycling needs and more sustainable materials are developed and promoted. This will deliver greater added value and prosperity in Europe and boost innovation. **Furthermore, we ask the EU to ensure the standardized way of products' labelling as 'biodegradable' or 'compostable' that will not mislead consumers to dispose of it in a way that causes plastic litter.**

- **Accordingly, we ask the Commission for new legislation on waste management that will ensure the standard and unified resources of raw materials for the needs of the chemical industry** as the increasing the amount of plastic recycled is important for a circular chain, but next to its quantity is also important to point of attention on its quality.

- The ECRN regions also strongly support all activities to boost recycled plastics use in new products and packaging as much as possible by 2025, with plastics-using company achieving an average of at least 30% recycled plastics (in weight) in their range of products and packaging. Using more recycled plastics can reduce dependence on the extraction of fossil fuels for plastics production and curb CO2 emissions that support the achieving of the ambitious goals of the European Green Deal.

- With respect to the re-use of plastics, the ECRN-regions strongly support legislation on Extended Producer Increase Responsibilities (besides packaging). For example in textiles, in order to create demand for rPET in that segment, too. However, a large share of the polyester or PET production goes to textiles, and therefore more restricted legislation in this branch is also asked for.

- The ECRN calls the EU for taking appropriate measures that are needed, such as CO2 taxation on a European scale. And that does not only apply to 'large' businesses. It is precisely in the biobased economy that we can be successful on a small scale by operating 'smart' and distributing the revenues of innovations more fairly. So the introduction of a CO2 tax is urgently requested. But besides, an additional compensation for a recycler who reduces CO2 production is even a greater incentive. So not only a negative impulse for the production of additional CO2, but also a stimulance for the reduction of CO2.

- The ECRN regions highlight that it is extremely expected to further develop and support the cross-border and interregional cooperation on a pan-European scale to up-scale the plastic reuse and chemical recycling.

- Cooperation with the business and knowledge institutions are of great importance interest. For larger initiatives, the ECRN is a partner that opens the right doors, where necessary supports and create the cooperation to scale up. The ECRN regions play a key role in boosting and distributing the necessary knowledge. Both internally to make policy based on the latest scientific insights and as external to market the required knowledge to provide.

SUPPORTING THE INNOVATION POTENTIAL OF SMALL AND MEDIUM ENTERPRISES

- The complexity of new products is increasing exponentially. Recycling processes are also becoming increasingly complex as a result. Investments in high-tech chemical recycling infrastructure also have long payback periods. In today's economic context, this is not an option for many companies. This may pose an obstacle to cost-efficient re-use, repair, and recycling. I**n this context, the financial support on the EU level is essential for scaling up and further development of research and innovations of the chemical plastic recycling but also for SME's as the key players on the market that take the highest risk of the application of the new technologies.** With respect to this the time-consuming length of the procedure to allocate funds also has to be stressed. Large companies/ multinationals have the 'power' to cope with this problem, but for SME's this a problem which hardly can be tackled. It is strongly expected to take some risk away and make it possible for SME's to get investors ready to invest in their ideas.

- To tackle plastics waste and pollution at the source, we need to fundamentally rethink the way we produce, use and reuse plastics. No single organisation or individual can do this on its own. It requires a systemic shift, involving collective action by businesses from across the plastics value chain, governments, and civil society. A common vision aligns all actors on a joint understanding of what good looks like.[1] Closing the material circuits reduces our dependence on materials imports, and therefore has a potential positive impact on the growth of the transport flows. **This offers opportunities for the development of new activities in the major existing sectors, such as life sciences, bio-based chemistry and plastics and the recovery and development of critical and valuable metals.**