

Policy Position

Plastic Waste

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There is a growing awareness of the impact of plastic waste upon the natural environment, and citizens and governments are increasingly calling for a move towards circular economy models to make better

1. Reduce and re-use: following the waste hierarchy

Plastics are useful and important materials, and can be the most environmentally friendly choice in many applications due to their light weight and durability. They often have a lower CO₂ impact in manufacturing and transportation than alternative materials (for example, cotton, glass, paper or metal). We can and should continue to use plastics to make the most of these benefits, while reducing the amount of plastics discarded by ensuring they retain their value for longer. Measures to this effect should follow the waste hierarchy and focus on reduction and re-use as well as on recycling. This includes creating societal awareness to reduce plastics use, promoting re-use through deposit return schemes, alongside support for technologies, incentives and regulations that promote plastics recycling.

2. Working together: enabling a circular plastics economy through 'Quadruple Helix' collaboration

Plastic waste is a problem that is interactive in nature, influenced not only by science, but by economics, policy and consumer behaviour. A 'Quadruple Helix' model should be pursued, whereby government, academia, industry and society work together to address the challenges posed by plastic waste. This includes finding ways to enable us to move away from take-use-dispose models, investing in applied and discovery research into new materials and recycling technologies, developing regulation and incentives to promote the use of recycled plastics in new products, and enhancing producer responsibility requirements to facilitate effective tracking, management and recycling of plastic waste.

3. Invest in R&I: addressing challenges related to plastics use and disposal

Investment is needed to support early-stage research into the chemistry of plastic materials and their alternatives, in order to reduce the use of plastics and the cost of recycling plastics. This will help develop a circular economy by reducing our dependence on raw materials and reducing the impact of waste from plastics that are already in use. Investment should also be made available to support the monitoring, analysis and measurement of plastic waste in water, soil and air, and to understand its impacts on the environment and on our health. Interdisciplinary and international collaboration will be an essential part of these research efforts due to the global nature of the problem.