

Advancing Possible: LyondellBasell's Contribution to a European Circular Economy



lyondellbasell

Advancing Possible

Europe has initiated a transition from a linear towards a circular economy and the unique characteristics of plastics can contribute towards this societal transformation. The goal is to create a modern, low-carbon, resource- and energy-efficient economy that can make a tangible contribution to reaching the United Nations 2030 Sustainable Development Goals and the objectives of the Paris Agreement on climate change.

In 2018, the European Union has taken significant steps to reduce plastic waste and marine litter. The legislative measures proposed demonstrate that the EU understands the value of plastic but wants to ensure it does not end up in the oceans.

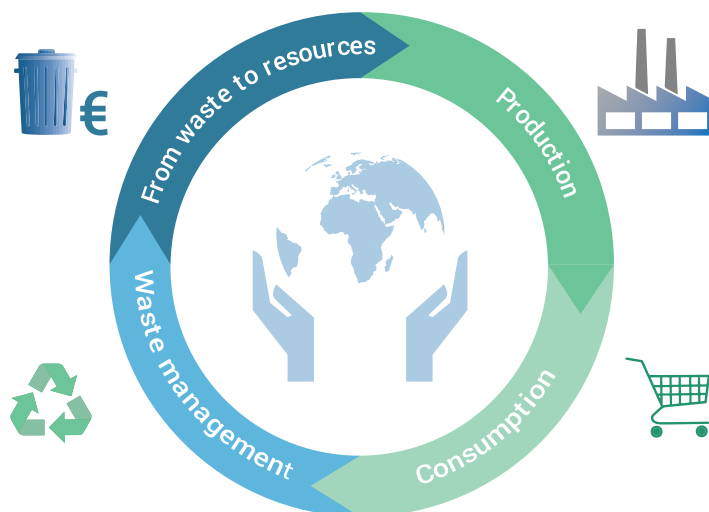
LyondellBasell embraces the opportunities arising from these policies and supports the efforts of the EU to reduce marine litter and improve plastics recycling. In the following pages, you will see how the Company is working closely with EU regulators and policymakers to drive exciting advancements that will underpin LyondellBasell's success for years to come.

Europe's Answer: A Circular Economy



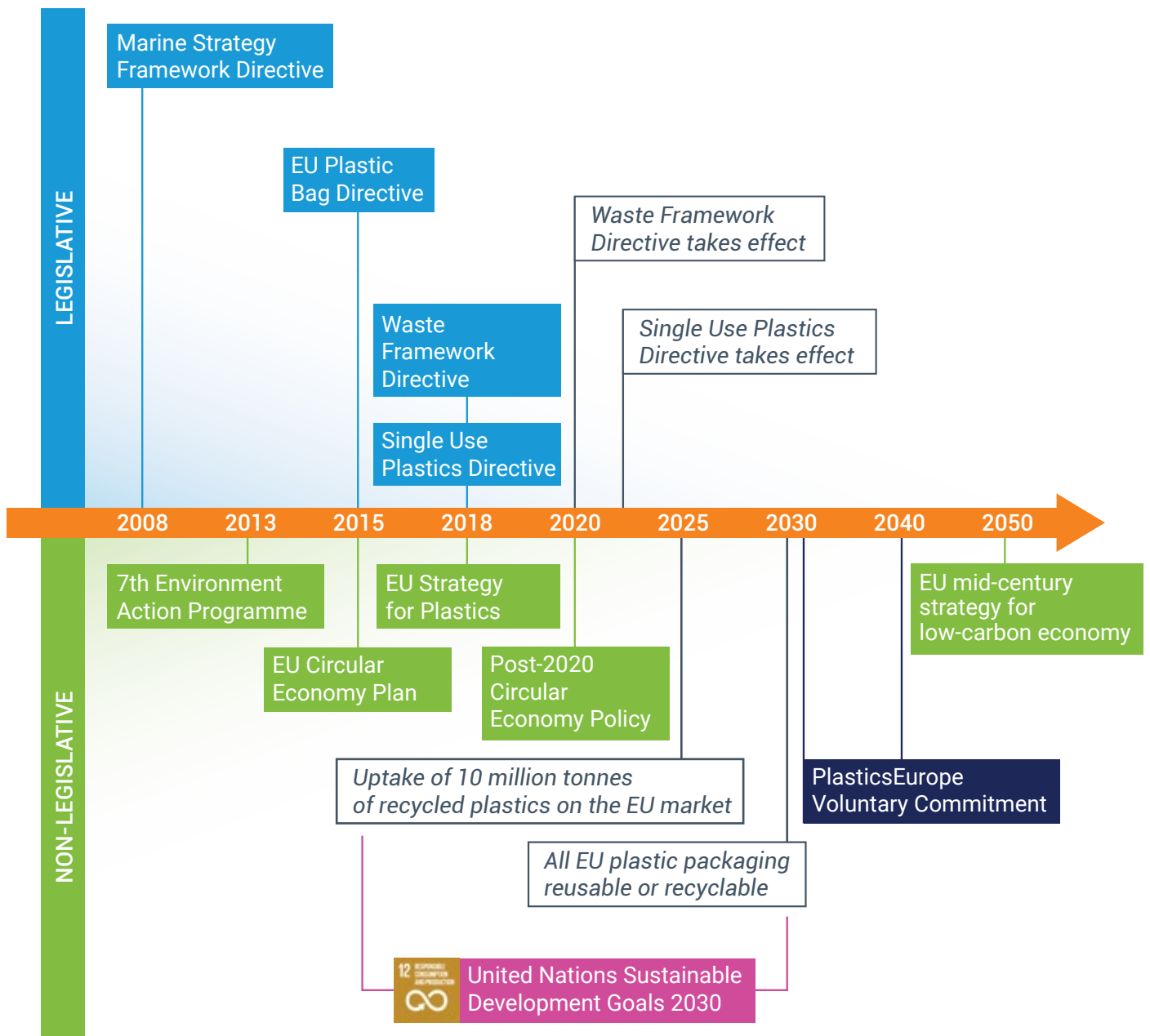
In 2015, the European Commission adopted the circular economy package. It includes policy actions that support “closing the loop” of product lifecycles at each step of the value chain – from production to consumption, repair and manufacturing, waste management and the generation of secondary raw materials.

The implementation of the circular economy package is supported by several legislative and non-legislative acts, including proposals for long-term targets to improve waste collection, reduce landfilling and increase recycling and reuse. At the end of 2017, the waste framework directive was revised, and new recycling targets were adopted for 2030. These include a specific recycling target of 55% for plastic packaging, a common EU target for recycling 60% of total municipal waste and a binding target to reduce landfill to a maximum of 10% of municipal waste.



▲ Source: European Commission

EU Legislation: Outlook

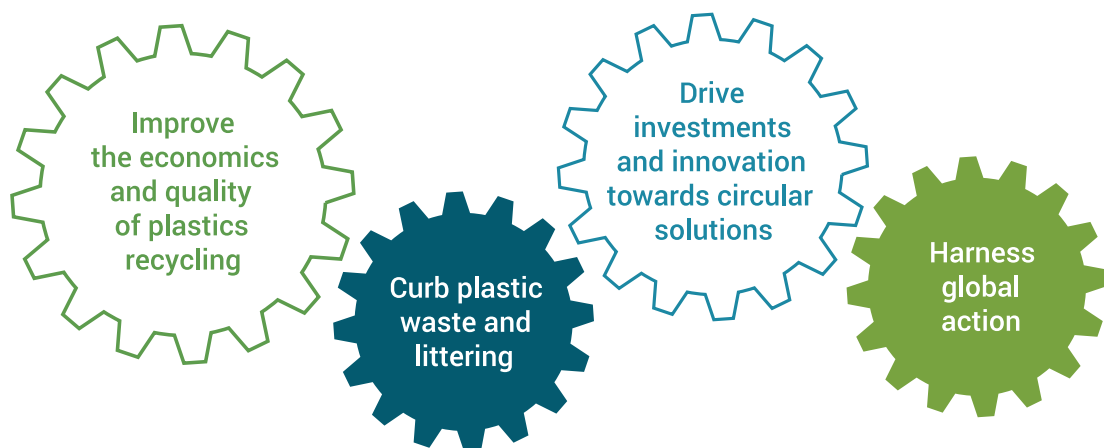


A European Strategy for Plastics in a Circular Economy

In line with the United Nations Sustainable Development Goals and the EU circular economy package, a new, long-awaited, EU strategy for plastics was issued in January 2018. The key objective is to transform the way plastics and plastic products are designed, produced, used and recycled.

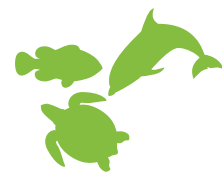
The EU strategy for plastics is an ambitious effort to scale up and modernize the EU's sorting and recycling capacity, boost innovation and reduce plastic littering in the environment. To improve the economics and quality of recycled plastics, new quality standards for sorted plastic waste and recycled plastics will be developed. Other policy measures support eco-design of product to ease recyclability. As packaging is one of the main sources of plastic waste, the EU wants to make all plastic packaging placed on the EU market reusable or recyclable in a cost-effective manner by 2030.

The strategy is calling on all stakeholders to boost the market uptake of recycled plastics through voluntary pledges. Waste management authorities and recyclers, plastic producers and converters, end users and brand owners are invited to join. The objective is to ensure that 10 million tonnes of recycled plastics find their way into new products on the EU market by 2025.



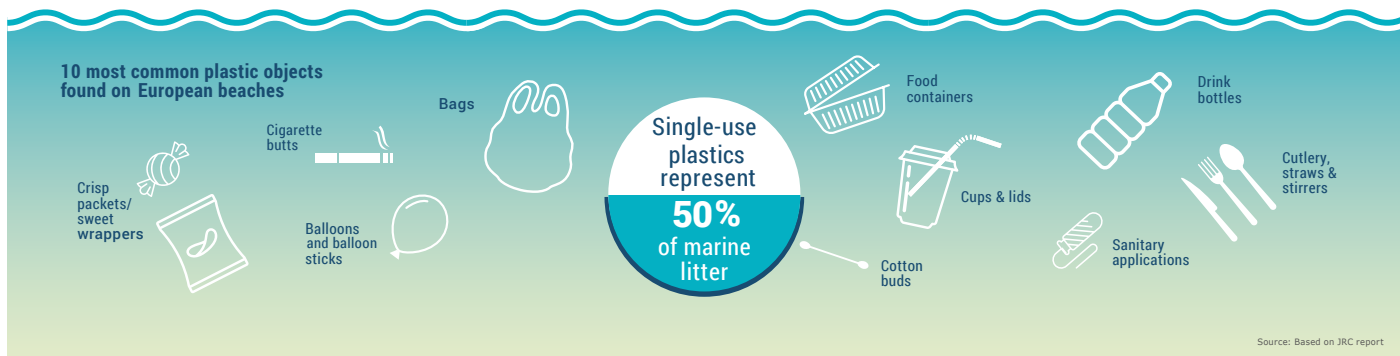
▲ Source: European Commission

Focus Area 1: Marine Litter



EU approach

▼ Source: European Commission



Concern regarding marine litter is not new and was already reflected in the 2008 Marine Strategy Framework Directive and the 7th Environment Action Programme adopted by the EU in 2013. Europe is also active in promoting global coordination through the G7/G20 Marine Litter Action Plan, in the context of the United Nations Sustainable Development Goals, to be reached in 2030.

In 2018, marine litter has also been a key driver for the new EU policy initiatives on single use plastics (read next) and microplastics. On the latter topic ECHA, the European Chemicals Agency, has been tasked to examine a potential restriction on intentionally added microplastics under REACH.

LyondellBasell's response

Any waste entering our rivers and oceans is unacceptable. The priority should be to stop waste of any kind, including plastic waste, from being littered and leaking into the environment.

To combat marine litter, we engage and take the lead, in Europe and globally. LyondellBasell is a co-founder and currently chairs the World Plastics Council, a global forum engaged in initiatives such as the World Ocean Summit and the UN Ocean Conference to develop effective solutions to marine litter. LyondellBasell also holds leadership positions on the boards of key industry associations such as Cefic, PlasticsEurope, the American Chemistry Council (currently chaired by Bob Patel), the Plastics Industry Association (USA) and many others around the world. This is enabling us to help drive these organizations to develop a comprehensive global strategy to eliminate plastic waste in the environment.

Our belief is that voluntary and active engagement by industry in innovation, prevention and education is very effective to reduce plastic pollution in the marine environment.

Focus Area 2: Single Use Plastics



EU approach

Following the release of the EU strategy for plastics, a new directive proposal on single use plastics (SUP) was issued in May 2018. The proposal targets the ten single use plastic products most often found on Europe's beaches and seas, as well as lost and abandoned fishing gear.

SUP items are divided into various categories, depending on whether readily available, sustainable alternatives exist, and the proposed measures range from "market restriction" (ban) to "consumption reductions", "product requirements" (eco-design) or obligations for producers (extended producer responsibility to cover the costs of recovery and awareness raising). SUPs for which a ban is proposed are cotton bud sticks, cutlery, plates, stirrers, straws and sticks for balloons. Also, Member States must achieve a "significant" (but still undefined) reduction in the consumption of cups for beverages and certain food containers which are designed for take-away food. These "on-the-go" containers, packets and wrappers and beverage containers are to be covered by extended producer responsibility schemes in the future.

This proposal is not intended to apply to food packaging which extends the shelf-life of pre-prepared foods and is limited to take-away food containers. The political discussion is still ongoing, and the directive, expected to be adopted in 2019, could be substantially different.

LyondellBasell's response

LyondellBasell supports the overarching objective of the Single Use Plastics directive i.e., to reduce marine litter. We believe that making progress on this issue is necessary and urgent and that all stakeholders, including plastic producers, need to accelerate joint efforts.

Our concern however is that imprecise definitions could lead to misinterpretation at Member State level or create uncertainty in the market, especially for packaging producers.

LyondellBasell is therefore actively advocating on this issue. It does so directly, for instance by meeting members of the European Parliament and representatives of Member States, as well as indirectly, working with sectoral or business trade associations such as PlasticsEurope and AmCham EU. A key objective is to ensure that the final text will include more precise and workable definitions that are consistent with the environmental legislation and international standards and exclude items that are not linked to marine litter.

Focus Area 3: Plastic Recycling



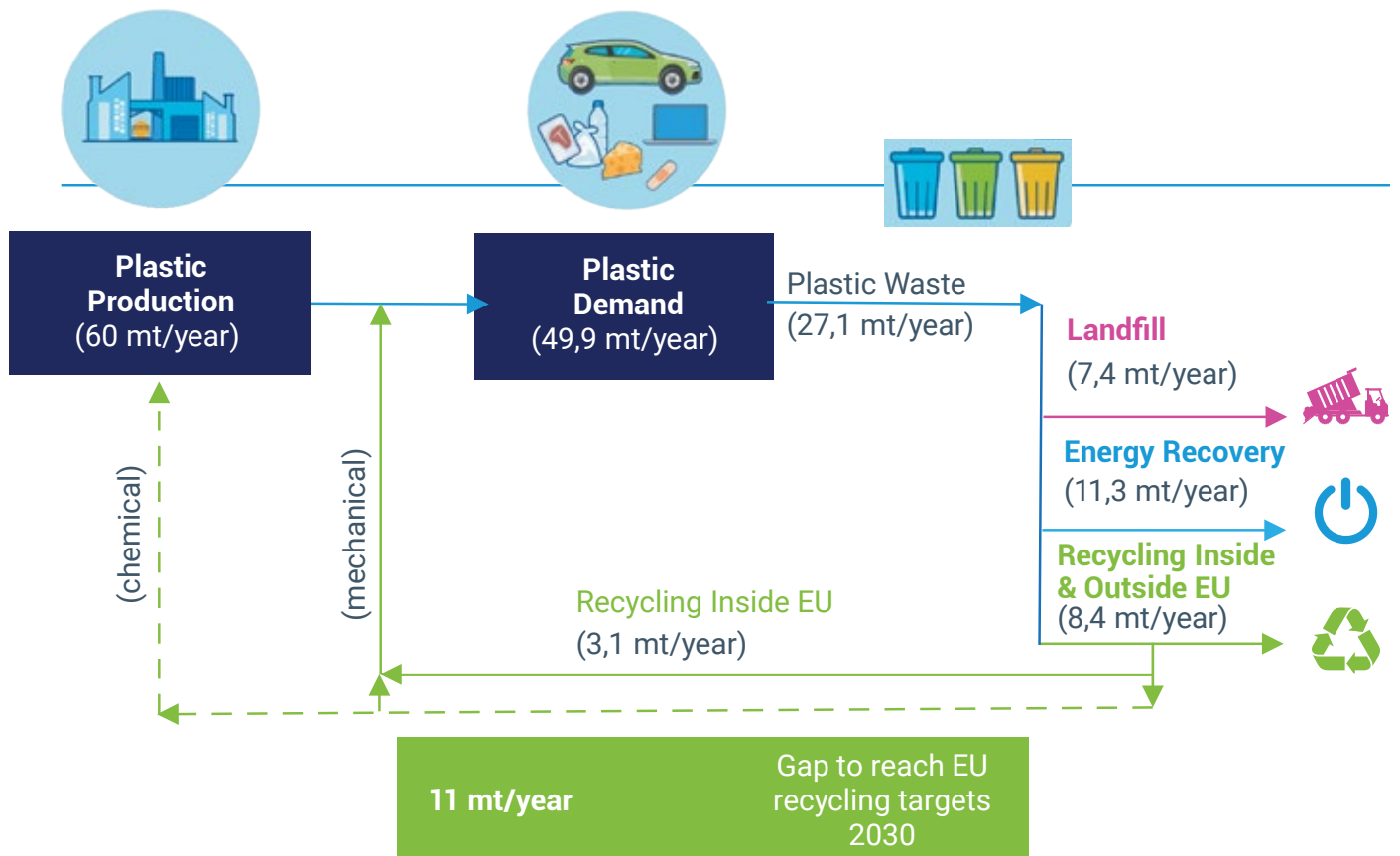
LyondellBasell is driving innovation and investments towards circular solutions. Our joint venture in QCP (Quality Circular Polymers) and the new partnership on chemical recycling with the Karlsruhe Institute of Technology are the first steps in this direction. Building on our leadership in innovative plastic production technology, our ambition is to grow, become part of the solution to the world's waste problem, and meet market demand.

QCP and Mechanical Recycling

In March 2018, LyondellBasell announced a strategic partnership with SUEZ to invest in QCP, a Dutch business that is producing high density polyethylene (HDPE) and polypropylene (PP) resins from postconsumer packaging waste. LyondellBasell markets high-quality grades produced at QCP, which will be comparable in quality to virgin plastics.



▲ QCP in Geleen, Netherlands



▲ Sources: LyondellBasell, PlasticsEurope, European Commission. 2016 data.

Chemical Recycling

LyondellBasell is also on the cutting edge of chemical recycling, a complementary emerging technology to traditional mechanical recycling processes. We firmly believe that only chemical recycling will allow to tackle the challenge of bridging the gap, both in volume and quality terms, between the low rates of recycling and the societal demand to “close the loop” and achieve a true circular economy.

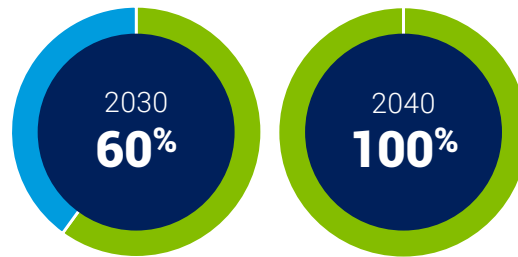
Here again, through extensive advocacy and outreach, LyondellBasell is actively promoting the benefits of chemical recycling, requesting it to be included in the EU research and innovation policy agenda. LyondellBasell was instrumental in obtaining political support for an amendment adopted by the European Parliament on chemical recycling in its review of the EU strategy for plastics.

LyondellBasell is also active at national level and through national chemical associations such as UIC (France) and VCI (Germany) and recycling consortia Corepla (Italy) and Cicloplast (Spain). LyondellBasell recently submitted proposals for future funding of chemical recycling under the Important Projects of Common European Interest (IPCEI) scheme and the German national research program on decarbonization of the industry, linked to the national Climate Action Plan that aims to transform Germany towards a carbon neutral economy by 2050.

Focus Area 4: Voluntary Commitments



To achieve the ambitious EU recycling goals, LyondellBasell supports the PlasticsEurope Plastics 2030 voluntary commitment to ensure high rates of re-use and recycling with the ambition to reach 60% for plastic packaging by 2030, and ultimately 100% re-use, recycling or recovery of all plastic packaging in 2040.



▲ PlasticsEurope Recycling Goals

The work along the value chain is supported by the Polyolefins Circular Economy Platform (PCEP), a multi-stakeholder group that seeks to identify the barriers and opportunities to increase Europe's polyolefins recycling and works towards ensuring the supply of high quality recycled polyolefins for the EU market. The platform collaborates with industry and public stakeholders in the European waste management value chain, aiming to collect, sort and reuse all polyolefins packaging.



Advancing Possible – Driving growth and sustainability



Changing market needs and new policy developments are the key drivers for companies like LyondellBasell to move towards a circular economy for plastics. Retailers and brand owners require sustainable products and solutions to meet their packaging targets. Meanwhile, regulations lay the foundation for a new plastics economy where we need to re-think the way products are designed, produced, used, and recycled.



- LyondellBasell embraces the opportunities arising from the circular economy and the EU strategy for plastics. As a leading supplier of polyolefins, LyondellBasell continues to invest in circular economy solutions aimed at increasing the recycling rate of polyolefin-based packaging, including addressing flexible polyolefin packaging systems which currently are difficult to recycle.
- Plastics recycling is a new business opportunity for LyondellBasell. Voluntary commitments and policy-driven initiatives will help accelerate the process. The goal of the EU strategy for plastics to make all plastic packaging reusable or recyclable by 2030 is a key driver.



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