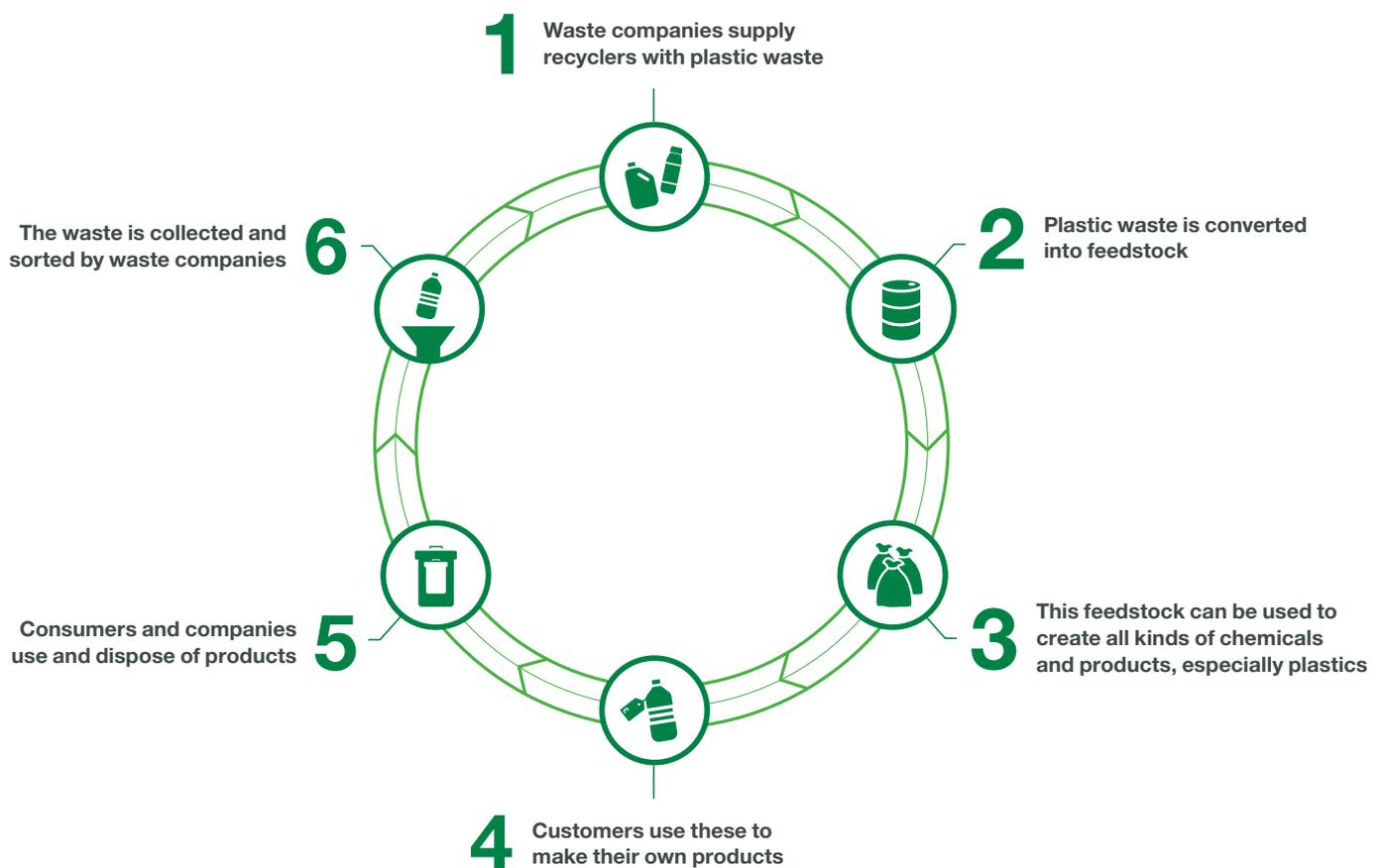


Chemical recycling

ChemCycling is the name of BASF's chemical recycling project: Through thermochemical processes, plastic waste is broken down to oil or gaseous products as raw materials for the chemical industry. These raw materials can re-

place fossil feedstock in the Verbund and be used to produce new products, especially plastics. Through a third party certified system, we can allocate the proportion of recycled resources in each product.



Chemical recycling is currently tested with first pilot products.

BASF intends to develop the technology on an industrial scale as it has the potential to:

Recycle plastics for which there are no recycling solutions today



Remove undesired substances in the process



Produce virgin-grade recycled material



Turn waste into feedstock for the chemical industry





Why does BASF do chemical recycling?

- Through chemical recycling, plastic waste which currently is landfilled or incinerated can and will be recycled.
- Customers have committed themselves to use recycled material in their products. We help our customers achieve these targets.
- Regulations all over the world are aiming to increase the recycling of plastics, e. g. through higher recycling targets.
- Pyrolysis oil or gas can partly replace fossil feedstock as raw material, saving fossil resources.



What are the advantages of chemical recycling?

Chemical recycling allows to recycle plastics for which there are no recycling solutions today: Mechanical recycling is well suitable to recycle pure materials, which are available via collection and sorting in large quantities. However, our waste also contains plastic products for which several types of plastics have been combined for optimal performance, plastics with adhering residues (e. g. food residues on packaging) and plastics which can not be economically sorted for recycling. Chemical recycling can be a way to recycle these materials, and thus divert them from the incineration plants or landfills in which they end up today. ChemCycling represents an exciting business opportunity for us and our customers, as the resulting products are of equal quality to the products derived from fossil feedstock.



Is chemical recycling environmentally benign?

At the end of life of a plastic product, the most eco-efficient solution should be chosen. As chemical recycling is an option to recycle mixed, multi-layer or other complex plastics, it is complementary to mechanical recycling and can be a more sustainable alternative to incineration or landfill. With a life-cycle analysis we ensure that the innovative approach creates value for the environment.



How can chemical recycling reach market maturity?

Before chemical recycling can fulfill its potential, both technological and regulatory requirements have to be met. On the one hand, the existing technologies for conversion of plastic waste into pyrolysis oil or syngas need to be further developed and adapted to ensure a reliable high quality of the secondary raw materials. On the other hand, the regulatory framework will determine whether the technology will become established in the waste industry. For example, the acceptance of chemical recycling and mass balance approaches for the fulfillment of recycling targets is crucial.