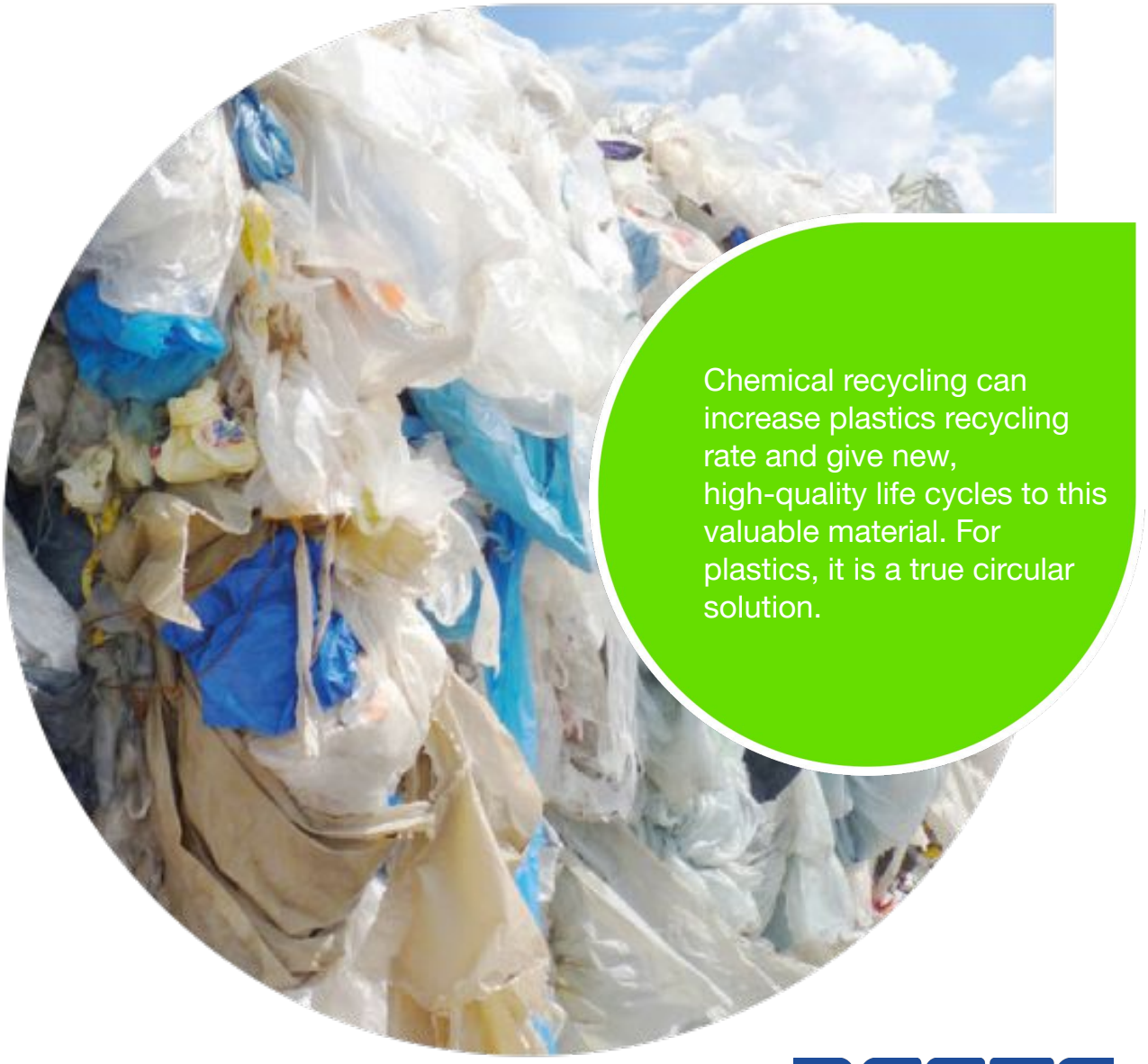
Chemical recycling helps turn plastic waste into high-quality products

Neste is working towards creating a healthier planet for our children. Our business is focused on combating climate change and driving circular economy. We are developing ways to turn plastic waste into high-quality products and aim to become a significant solution provider for chemical recycling.



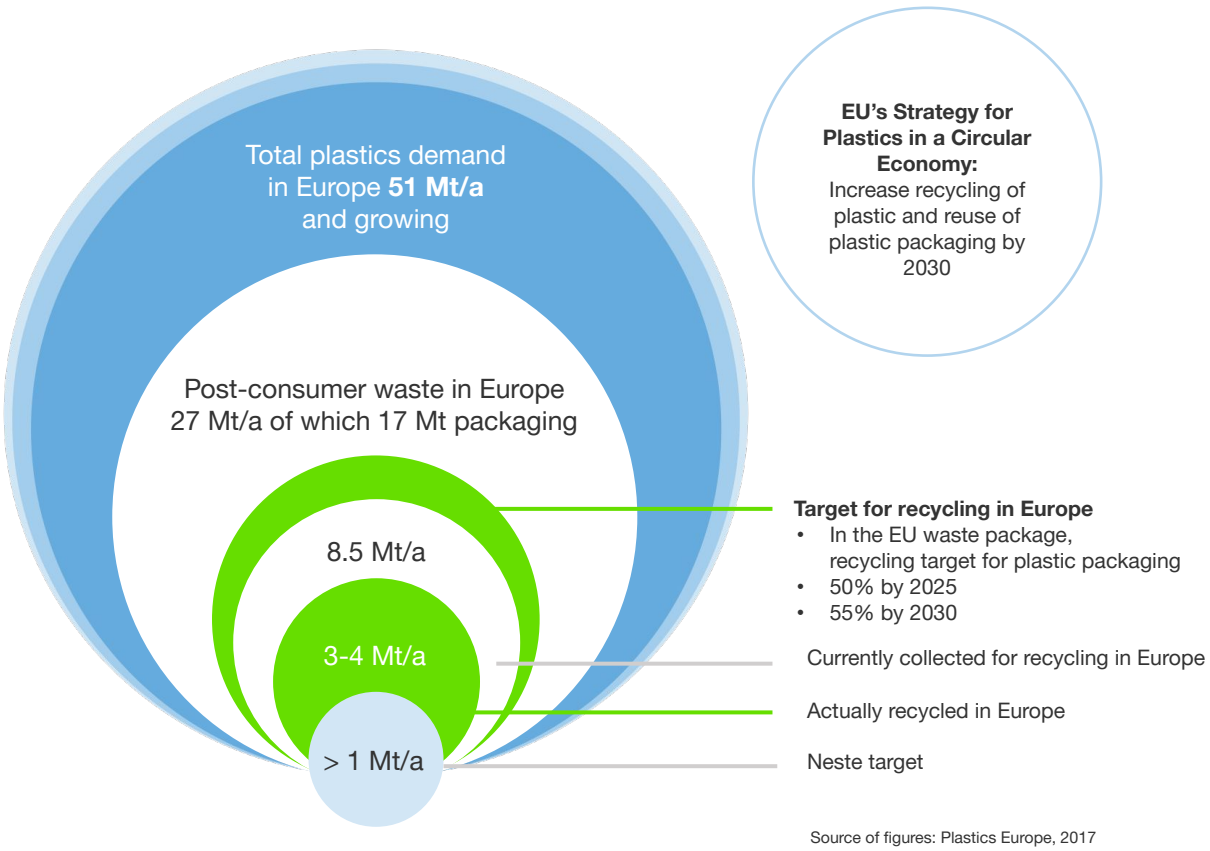
Chemical recycling can increase plastics recycling rate and give new, high-quality life cycles to this valuable material. For plastics, it is a true circular solution.

NESTE

The only way is forward

Chemical recycling gives new life to plastic waste

Chemical recycling means chemically or thermochemically processing waste plastic into raw material for the chemical industry. Development of chemical recycling is crucial for meeting the ambitious circular economy targets in Europe. Chemical recycling can complement mechanical recycling by utilizing waste plastic streams that currently have no or low value in recycling.



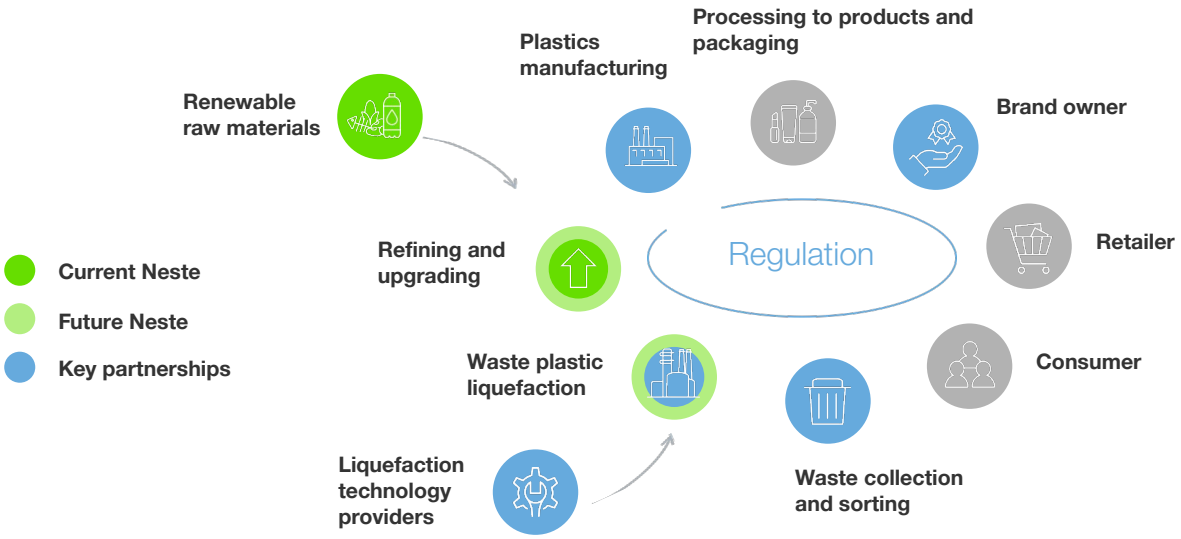
Source of figures: Plastics Europe, 2017

Why chemical recycling?

- **accelerates circular economy** and **increases recycling rates** by utilizing a wider range of waste plastics than traditional, mechanical recycling
- **produces high-quality end products** – new plastics, chemicals and fuels – that can be used as drop-in solutions in all current applications
- **decreases dependency on crude oil** imports and lowers the carbon footprint of products
- **supports global reduction of plastic waste** and **helps phase out landfilling**
- **can create new jobs** in Europe.

Neste aims to close the circularity loop for plastics

In line with its climate and circular economy targets, Neste has pledged to work towards processing more than 1 million tons of plastic waste annually from 2030 onwards. We aim to use liquefied waste plastic as raw material to produce high-quality plastics, chemicals and fuels. In parallel, Neste is developing sustainable solutions to plastics based on renewable raw materials.



Key steps in chemical recycling

Collecting and sorting

- Neste aims to utilize post-consumer plastic waste, which currently has no or low value in mechanical recycling, e.g. multilayer, multimaterial, colored or film plastics. Today, they mainly end up in incineration or landfill.

Liquefaction

- Waste plastic is liquefied in a thermochemical liquefaction process, which turns it into a material similar to crude oil.

Refining and upgrading

- Liquefied and pretreated waste plastic is used to partly replace crude oil as refinery raw material.
- Neste's fossil oil refineries are versatile and produce a multitude of end products. These existing refinery processes can turn the liquefied waste plastic into raw material for new plastics; chemicals and fuels.

End products

- The plastics, chemicals and fuels based on chemical recycling are of high quality and can replace products based on virgin fossil resources in any application.
- Plastics based on chemical recycling can be used without limitations even in sensitive and demanding applications, such as food contact, medical, toys, and automotive.

What needs to be done

The European recycling target for plastic packaging is 50% in 2025 and 55% in 2030. Mechanical recycling is not enough: chemical recycling on an industrial scale must be developed and fully harnessed to support achieving these targets.

To enable this development, policymakers should:

- Acknowledge that all chemical recycling can be counted towards recycling targets.
- Ensure supportive legislative framework that enables and accelerates the development of the chemical recycling ecosystem and value chains.

Neste in brief

Neste (NESTE, Nasdaq Helsinki) creates sustainable solutions for transport, business, and consumer needs. Our wide range of renewable products enable our customers to reduce climate emissions. We are the world's largest producer of renewable diesel refined from waste and residues, introducing renewable solutions also to the aviation and plastics industries. We are also a technologically advanced refiner of high-quality oil products. We want to be a reliable partner with widely valued expertise, research, and sustainable operations. In 2018, Neste's revenue stood at EUR 14.9 billion. In 2019, Neste placed 3rd on the Global 100 list of the most sustainable companies in the world.

Read more: neste.com