



## Chemical Recycling

Expanding the mix of solutions for a  
Circular Economy

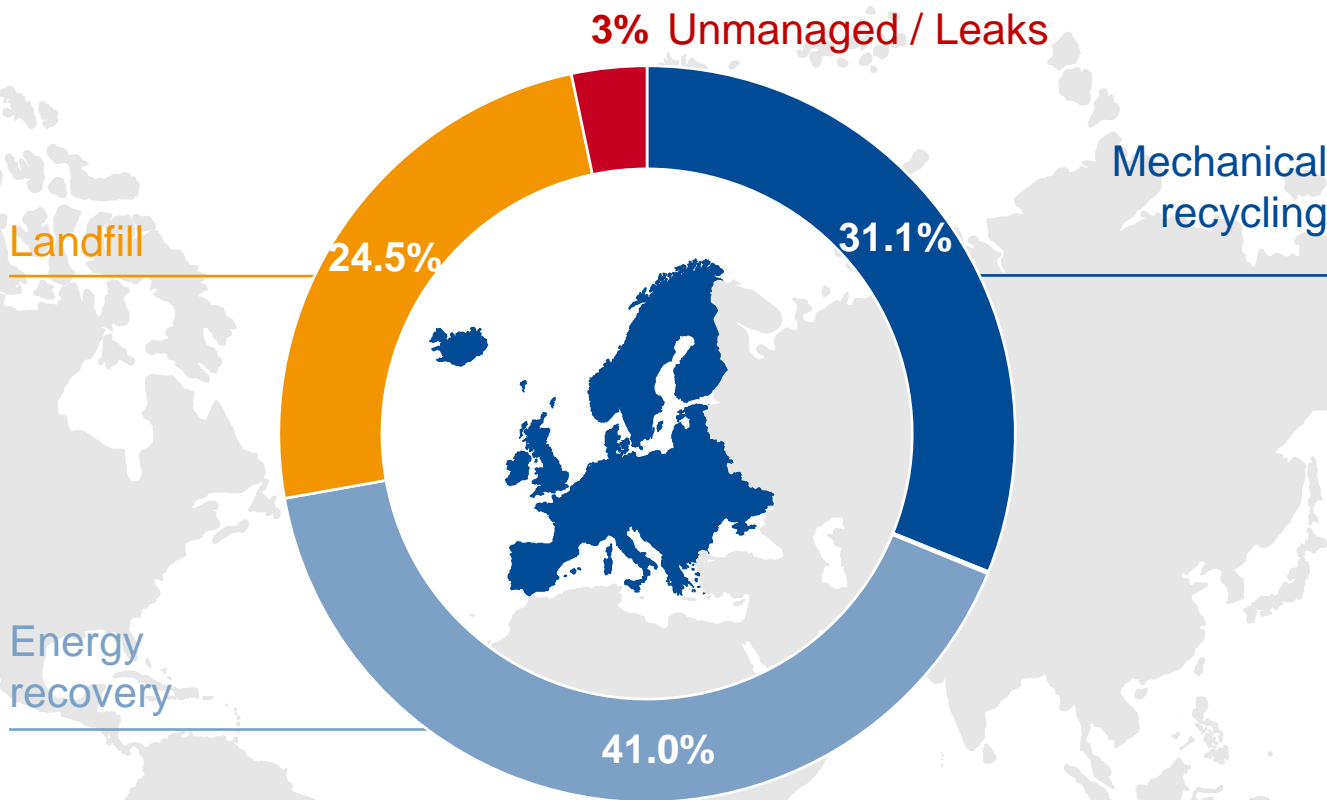
Teodora Kristof – BASF

DUIHK Green Deal conference | 16 June 2021

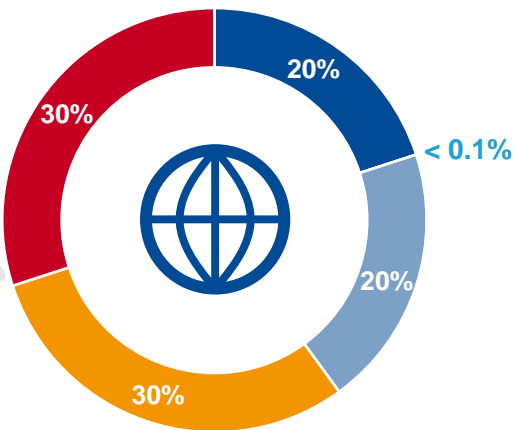


# Today's recycling landscape for plastic waste

## Fate of 30 Mt of plastic waste generated in EU28+2 in 2018



Globally: 250 million metric tons

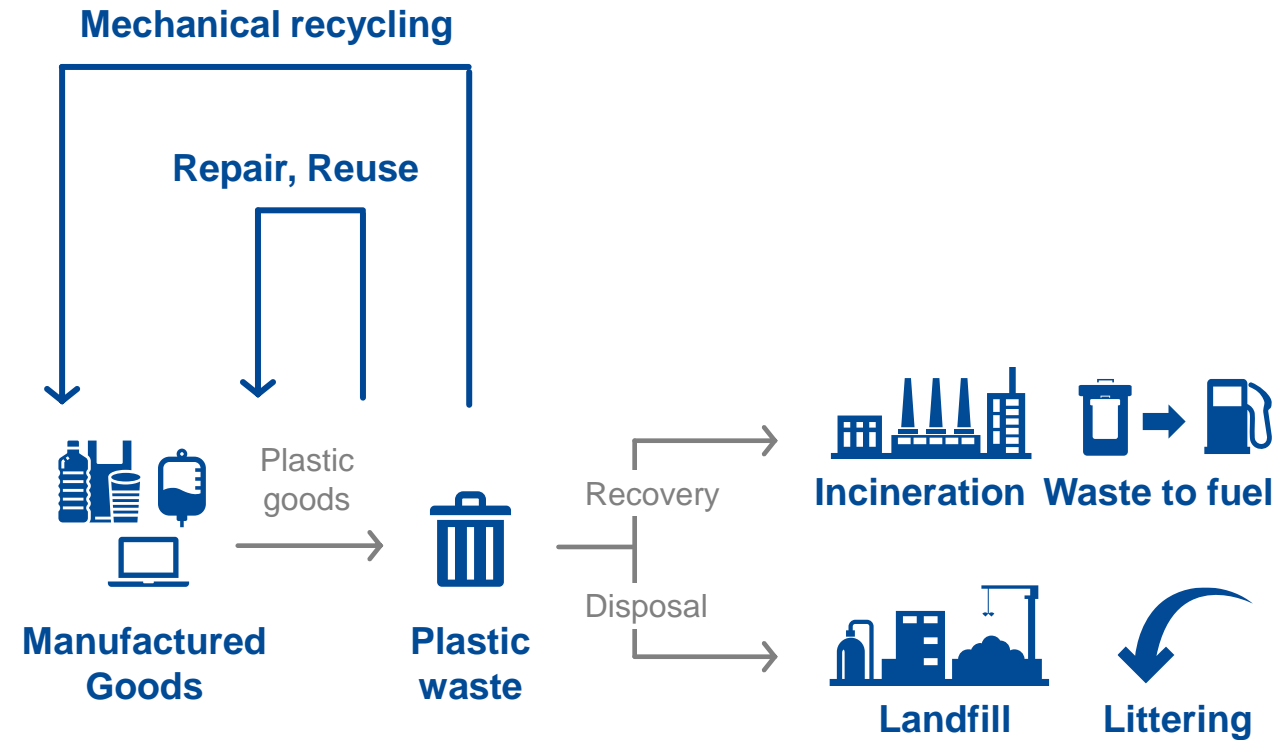


Only one third of all plastic waste is kept in the materials cycle in EU28+2.

Source: Conversio, "Circular Economy of Plastics 2018 EU28+2", September 2019 // Conversio, "Global Plastics Flow 2018", February 2020

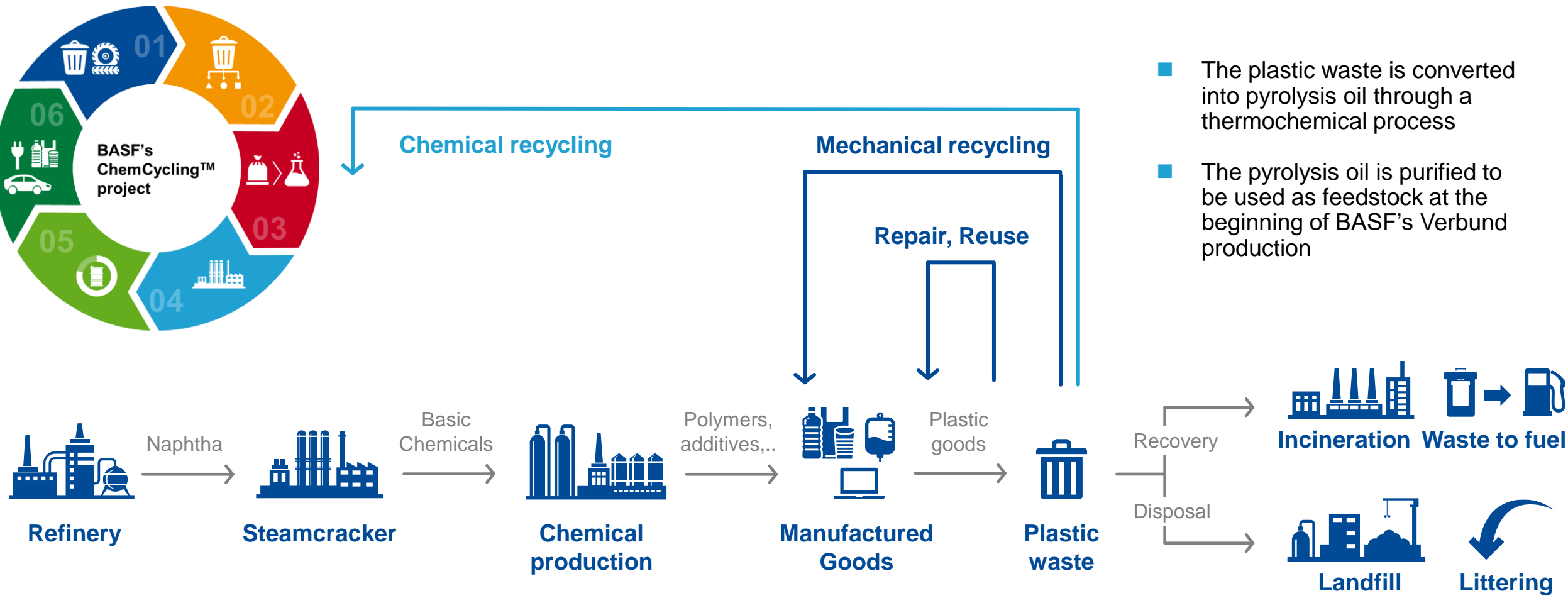
# Chemical recycling

A complementary technology to increase the amount of plastic recycled



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# Developing chemical recycling

## Deriving waste from incineration and landfill

- Chemical recycling targets **plastic waste for which no high value recycling processes are established**. e.g. multi-layer food packaging or scrap tires.



- **Investing and partnering** to develop chemical recycling
  - ▶ **New Energy (HU)** operates the pyrolysis of end-of-life tires
  - ▶ One plant in operation after almost a **decade of optimization in Budapest**
  - ▶ Feasibility study underway on the adaption of New Energy's technology to the conversion of other plastic waste streams



- Life-Cycle Assessment shows that **pyrolysis emits ~50% less of CO<sub>2</sub> than incineration**

<https://www.basf.com/global/en/who-we-are/sustainability/we-drive-sustainable-solutions/circular-economy/mass-balance-approach/chemcycling/lca-for-chemcycling.html>



# Regulatory support for chemical recycling is needed to reach market maturity

- BASF supports the transition to a circular economy and brings contribution to all kinds of solutions from the mix.
- To develop chemical recycling technologies, a supportive regulatory framework is needed:
  - ▶ Chemical recycling should be accepted in the regulatory framework and **count towards recycling targets**
  - ▶ **Incentives** for recycled content should apply to all kinds of recycling technologies
  - ▶ Flexible chain of custodies like the **Mass-Balance Approach should be supported.**





We create chemistry

# Mass-balance approach

- Materials are either physically segregated in production processes throughout the supply chain (“physical segregation”) or mixed in production but separated in bookkeeping (“mass balance approach”).
- It has been designed to trace the flow of materials through a complex value chain. Since chemically recycled or bio-based feedstocks are typically blended in the manufacturing complex, physical segregation of recycled content is often practically and economically infeasible. The mass balance approach makes it possible to track the amount and sustainability characteristics of circular and/or bio-based content in the value chain.

