



The journey of developing sustainable materials for LEGO bricks



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Our mission

**The LEGO Group's
mission is to
inspire and develop
the builders of
tomorrow**



Our planet promise

**We want to make
a positive impact
on the world our
children will inherit**



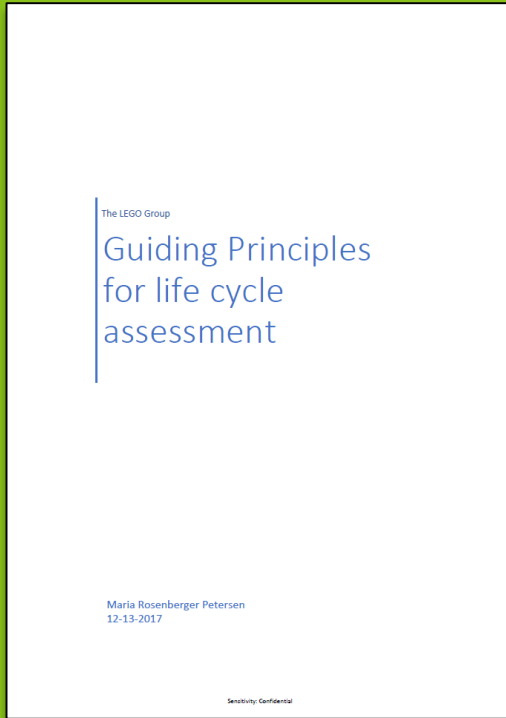
Commitment to use renewable energy

Commitment to use sustainable materials in all core products and packaging





The LEGO Group Guiding Principles for life cycle assessment



Provides guidance on

Standards and requirements

LCA method (attributional)

Impact assessment method

Recycled materials

Bio-based materials

Products



RENEWABLE

Made of recycled and/or sustainably sourced renewable materials

Sustainable materials cannot compromise

- Safety
- Consumer-perceived quality
- Durability of elements

Packaging



RENEWABLE

Made of recycled and/or sustainably sourced renewable materials



EFFICIENT

Eliminate excessive packaging with no consumer experience value-add



RECYCLABLE

Recyclable by consumers
Made of paper based materials whenever possible

Sustainable materials cannot compromise

- Safety

Organizational capabilities for sustainable materials

1

Material R&D: Chemists, physicists, Mechanical engineers, Colour experts, test engineers, colour experts.

2

Environmental & Safety: Environmental experts and product safety chemists, test engineers. Supported by external advisory board.

3

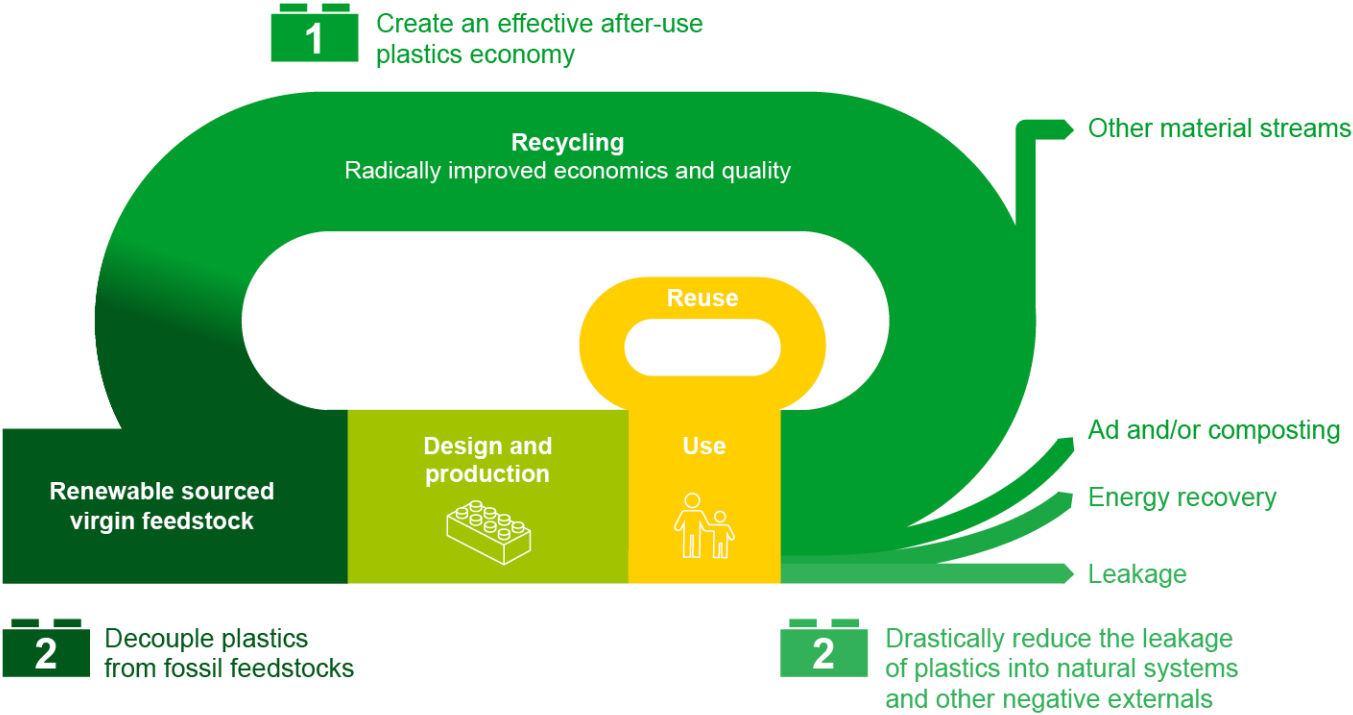
Product and production: Mechanical engineers, Process engineers, Moulding experts, Test and lab staff, Designers, Quality Engineers, EHS.

4

Others: Procurement, Project management, Financial support, Communication, Consumer understanding.



Creating circularity for plastic



This model from the Ellen MacArthur Foundation, which illustrates our thinking about a circular plastic economy

Carbon sources

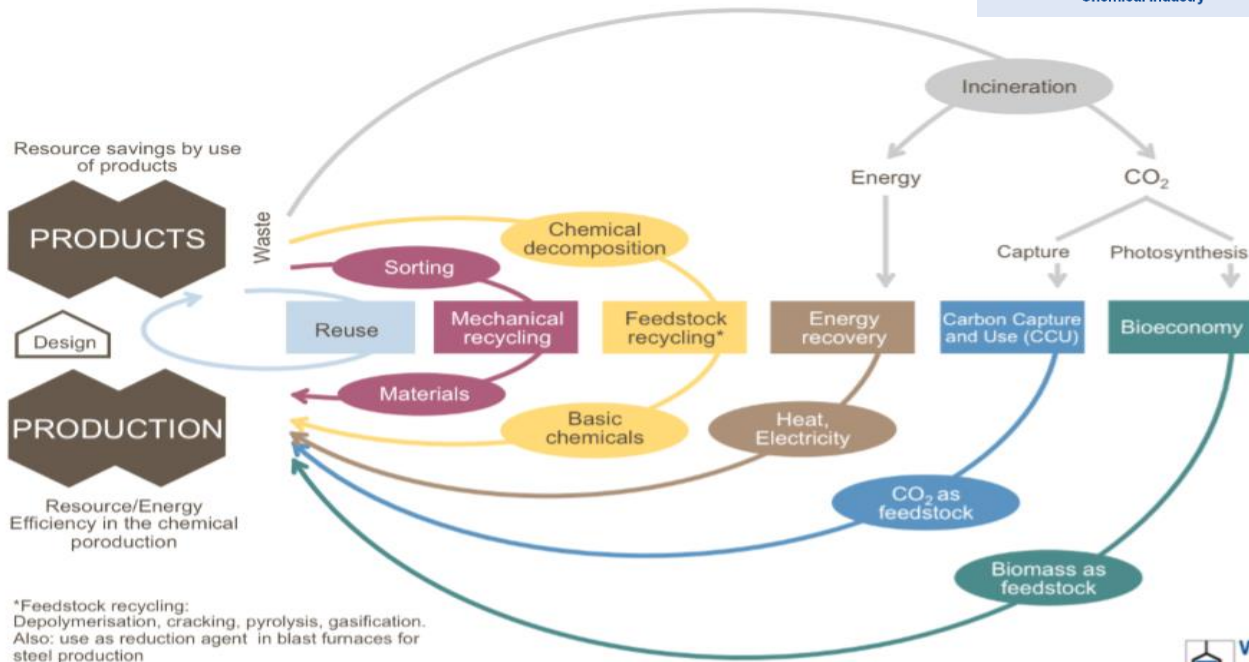


Circular Economy: Possible Loops for Carbon

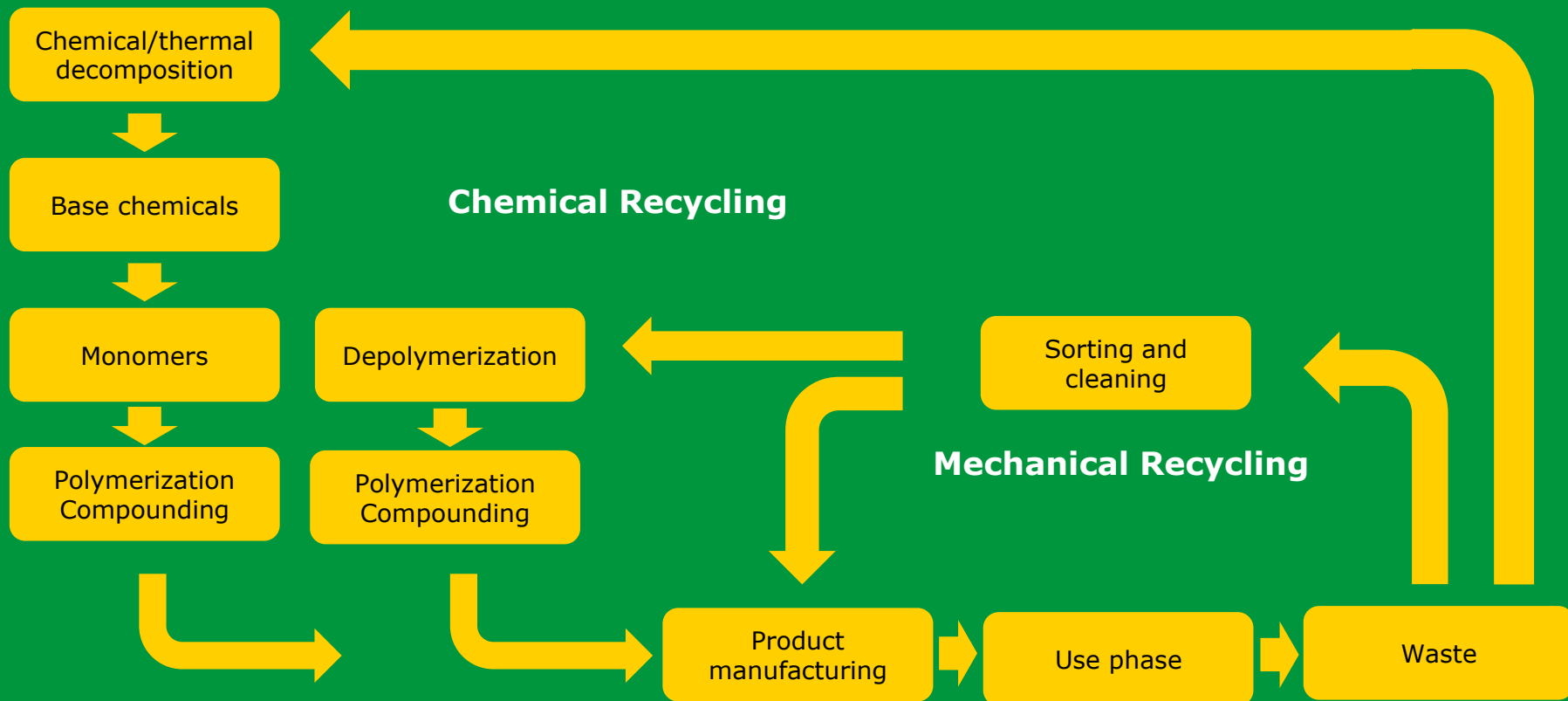


nova paper #10 on bio- and CO₂-based economy
2018-08

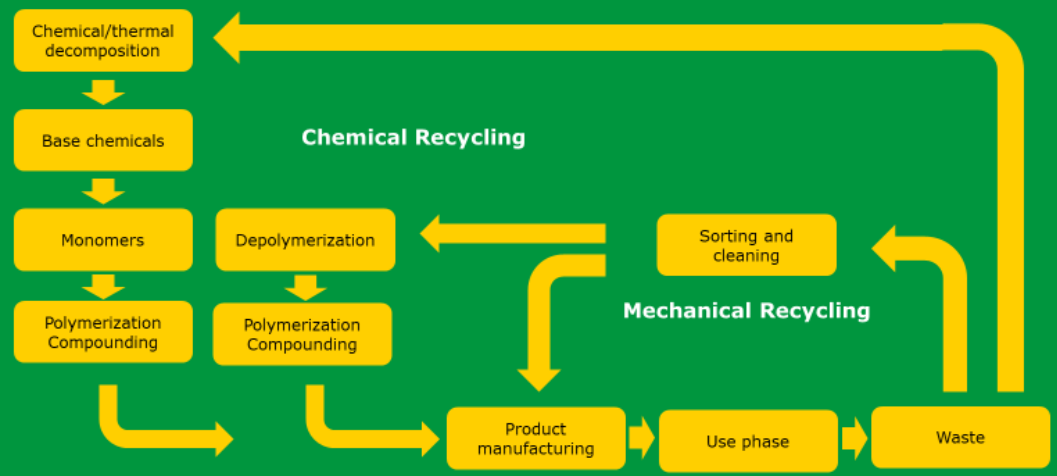
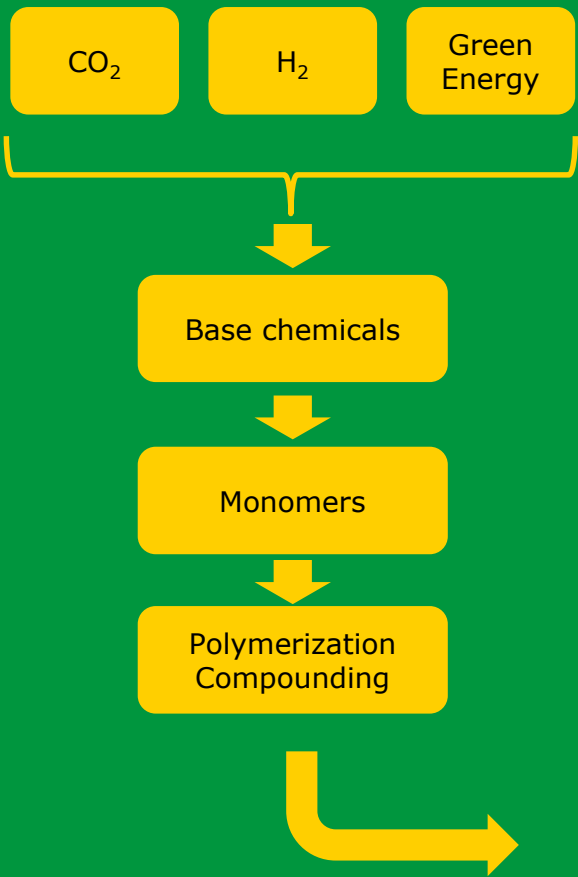
Renewable Carbon is Key to a Sustainable and Future-Oriented Chemical Industry



Circular options for plastics



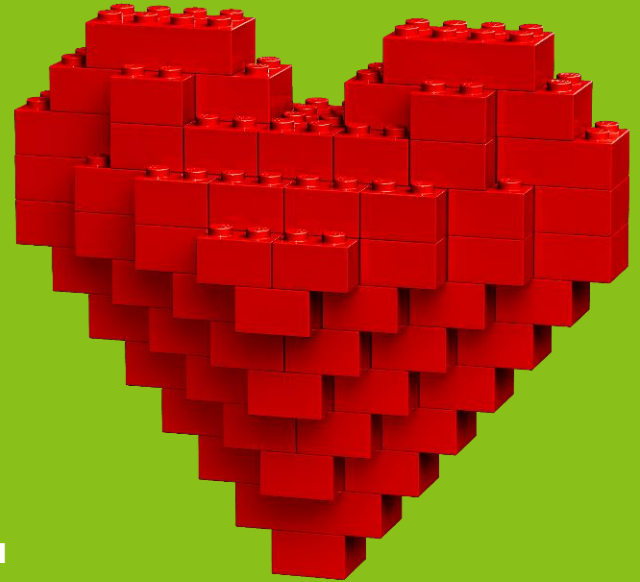
Carbon Capture



Learnings in general



- **The preparation process for sustainable materials has created a deeper understanding of present products and production processes.**
- **The organization is both learning the hard way and the smart way. New competences are created all across many departments.**
- **Industry and academia goes well together towards sustainable solutions.**
- **In order to develop sustainable materials for toys, you must know what a good play is for children.**
- **In order to produce really sustainable materials, you must know how the planet works.**





Thanks for your attention..

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