

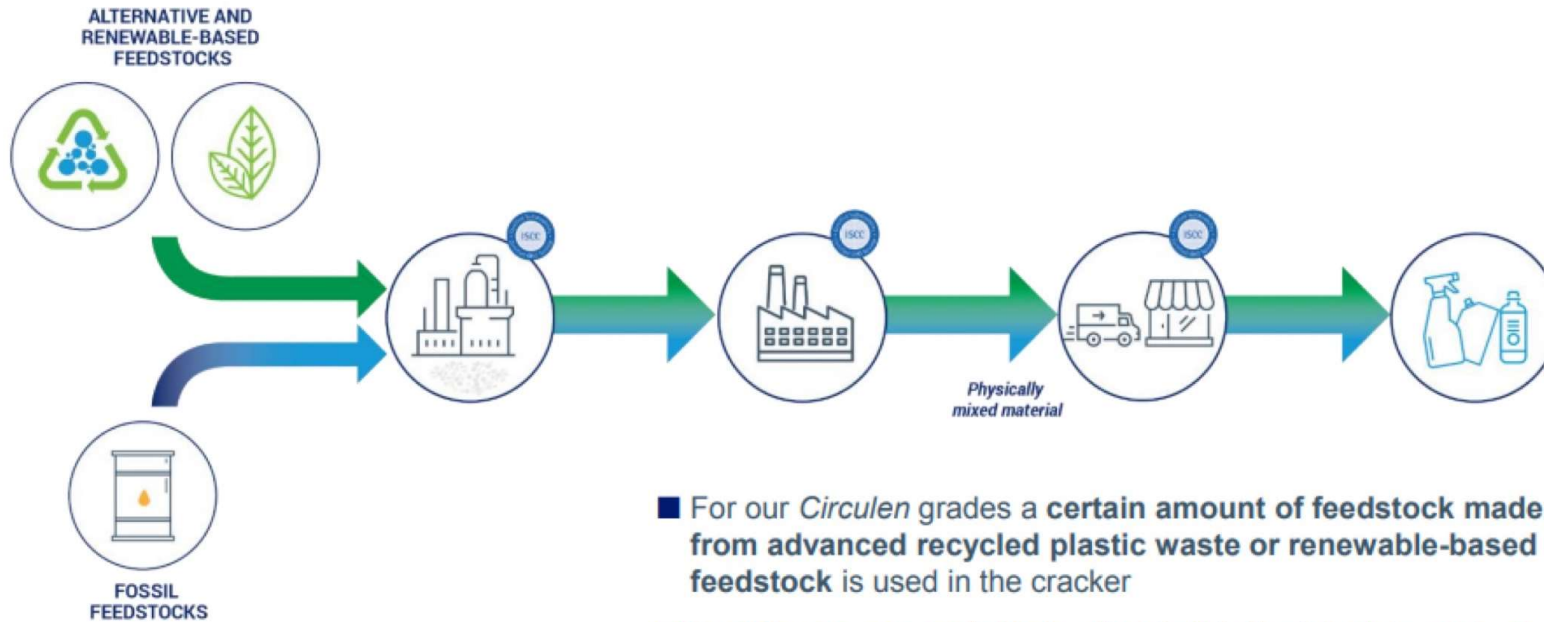


ADVANCING CIRCULARITY

Why Use Polymers from Renewable-based Resources?

- 75% lower CO₂e emissions for renewable-based PE and PP* compared with virgin-based feedstocks
- One to one Virgin Quality
- Drop in Solution for your food packaging
- Life Cycle Analysis ISO 14040-14044 compliant – peer reviewed (Dekra / VTT / CE Delft / University of Groningen)

*Cradle-to-gate LCA calculations based on a feedstock composed of waste and residue oils, when taking a waste like approach to all raw materials in the feedstock including palm fatty acid distillates (PFAD). PFAD are a production residue from the refining process of palm oil. Taking this approach for PFAD implies that neither upstream burdens nor process burdens for refining of palm oil are attributed to PFAD. Compared to fossil alternatives when using incineration as end-of-life scenario.



LyondellBasell Mass Balance Certificates Circulen Polymers

- For our *Circulen* grades a **certain amount of feedstock made from advanced recycled plastic waste or renewable-based feedstock** is used in the cracker
- **Certificates** are available to allocate this feedstock to product on a mass balance basis based on our own PP/PE assets.*
- **Certification provides traceability along the supply chain** and verifies that the mass balance accounting follows predefined and transparent rules
- Customers can use these certificates to verify **compliance with sustainability and traceability requirements**

*Produced in EU27. Excluding products from our JV partners.




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LyondellBasell **CirculenRenew** LCA results

Up to
-75%
savings of
CO₂e per ton of
polymer
production*

Compliant Conducted

ISO 14040
Approved Life
Cycle Assessment

ifeu
ISO 14040/44

Up to
-3.7
CO₂e per ton of
polymer
production eq.*

**100 % waste
residues**
non-Palm oil
& Animal Fat
(mass-balanced)

With *CirculenRenew* polymers, we support you in reaching your climate targets and in reducing the carbon footprint of your products.

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Feedstock supplier

- The raw materials used to produce the renewable feedstock:
 - have been **sourced from carefully selected partners** who are committed to sustainability, protecting biodiversity, and respecting human rights.
 - the majority of the renewable raw materials **includes waste and residues**.
 - The feedstock **excludes animal fat and crude palm oil (CPO)** on a mass balance basis, under EU Renewable Energy Directive (2009/28/EC) ("RED") Article 17.

