RE:newable biopolymers

Life Cycle Analysis

We have carried out independently-reviewed life cycle assessments to confirm the benefits of our renewable-based PE & PP solutions compared to their fossil alternatives.

TotalEnergies

LCA results based on a 100% coverage of European production assets

TotalEnergies has realized in 2023 a cradle-to-gate LCA Study[1] covering 100% of its European polymer production assets as well as its related petrochemical assets. The study was submitted to a 3rd party critical review panel under the supervision of Bureau Veritas as panel president. It is based on TotalEnergies primary data and Ecoinvent database 3.8 for secondary data.

The renewable based feedstock data used here are based on a dedicated (and also 3rd party critically reviewed) LCA study of our La Mède Biorefinery[2] where they are produced.

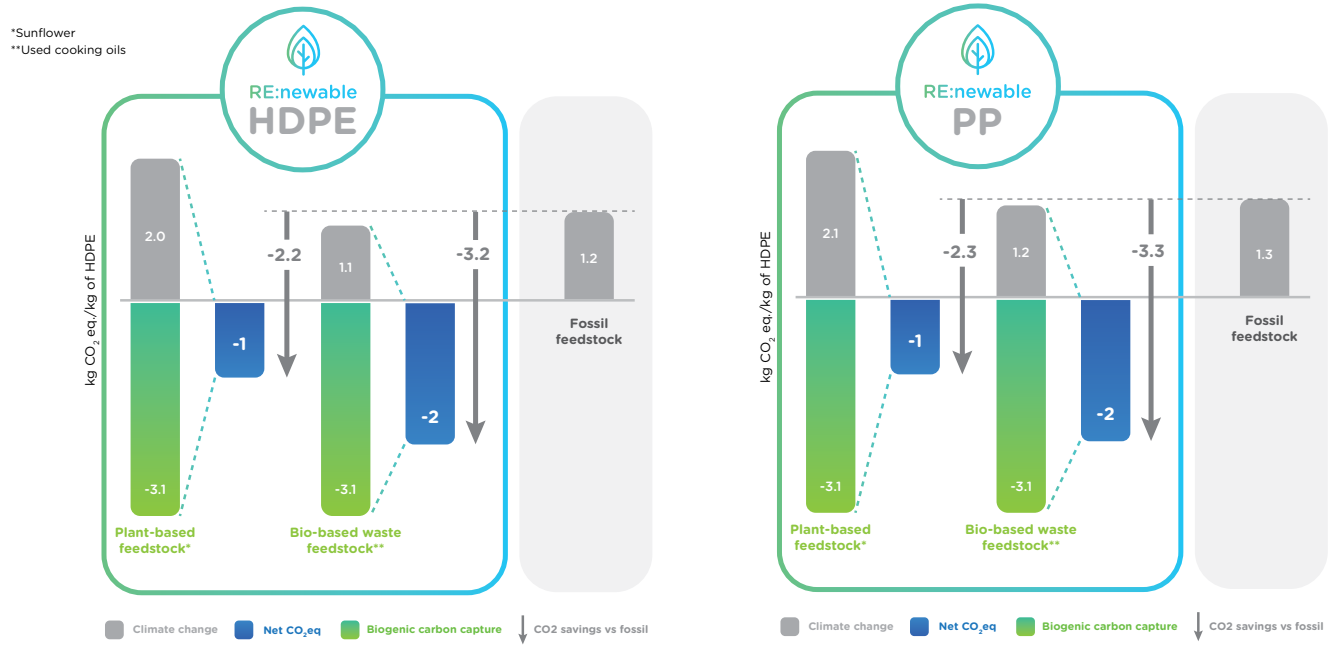
The assessment method selected was Environmental Footprint 3.0 (for GWP the IPCC 2021 substituted IPCC 2013) and all 16 indicators related to EF3.0 are available to our customers upon request. You will find in the graph below a specific focus on two of the most scrutinized indicators: "climate change" and "resource use, fossils" indicators for HDPE and PP.

LCA results for LDPE, EVA, PS, EPS TotalEnergies polymers are also available upon request.

GHG emissions (CO_2eq/kg)

At least 2.2kgCO_2eq savings per kg of HDPE or PP

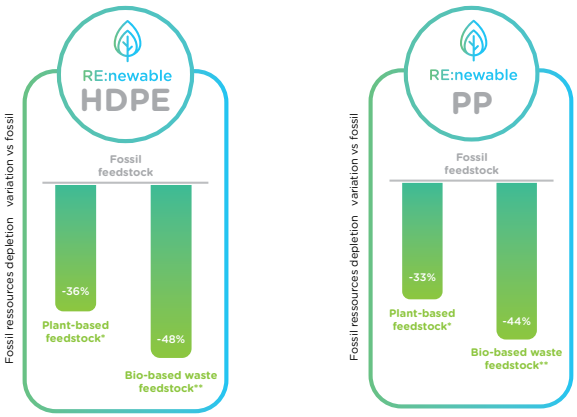
when replacing fossil-based TotalEnergies polymers with our renewable-based solution.



Fossil resource depletion savings

Up to 49% reduction in fossil resource depletion

is achieved when using TotalEnergies RE:newable solutions in replacement of its fossil-based alternative.



*Sunflower
**Used cooking oils

[1] Life Cycle Assessment of TotalEnergies European chemicals and polymers production study have not been using an "High Value Chemical" (HVC) type allocation and therefore should not be directly compared with results coming from such HVC type allocation.
[2] Life Cycle Assessment of La Mède biorefinery products