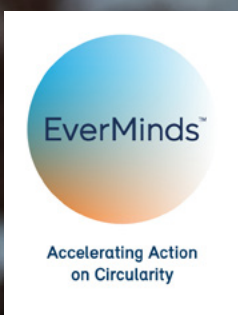


The Bornewables™

A sustainable alternative to virgin polyolefins

Borealis' portfolio of circular polyolefins reduces carbon footprint while offering equally high material performance



BOREALIS

بروج
Borouge

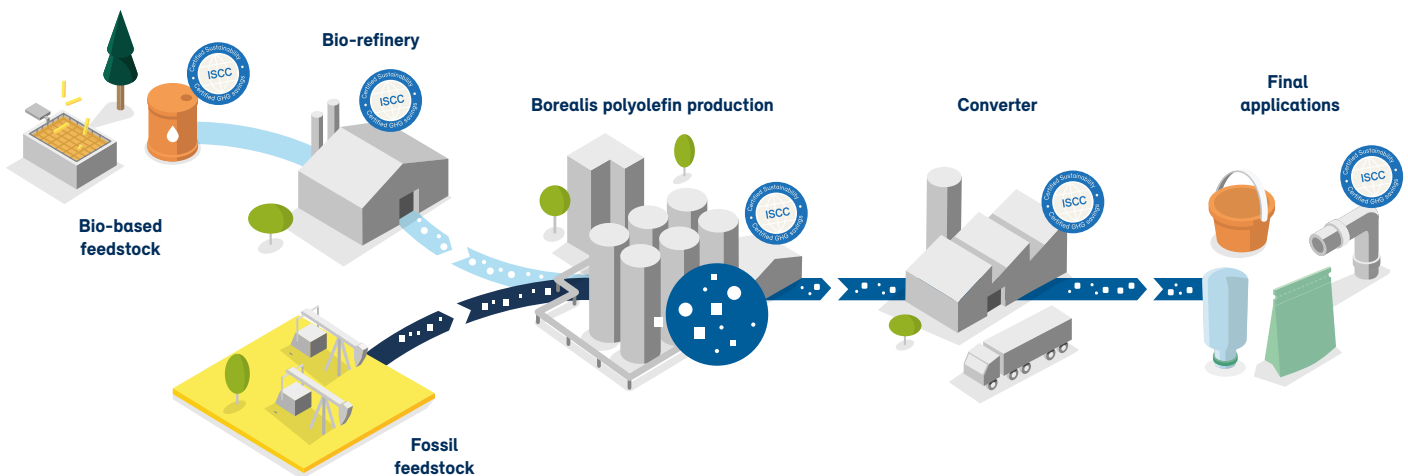


The Borneables™ are ISCC PLUS certified polyolefins with reduced carbon footprint, enabling our customers to meet their sustainability targets while maintaining existing quality standards

Borneables products are made using sustainably sourced bio-based feedstocks derived solely from waste and residue vegetable oils, such as used cooking oil and residues from vegetable oil processing. The residue from vegetable oil processing consists of rancid fat that has to be removed to produce food-grade oil. The used cooking oil, entirely waste and residues in origin, is a waste stream collected from restaurants and the food industry. These waste and residues are still good raw materials to be processed into our feedstock, helping to reduce waste and wastewater pollution, for example. These waste and residues are still good raw materials to be

processed into our feedstock and are traceable back to their point of origin, following the ISCC PLUS chain of custody.

The waste and residue raw materials that are used to produce our feedstock are no longer fit for human consumption, and as such, do not impact food security. While also reducing waste and wastewater pollution, their use helps to reduce the carbon footprint to the end-product compared to conventional plastics and contributes to the circular economy by helping to decouple plastics from the use of fossil feedstocks.



The Borneables™ are based on the mass balance approach

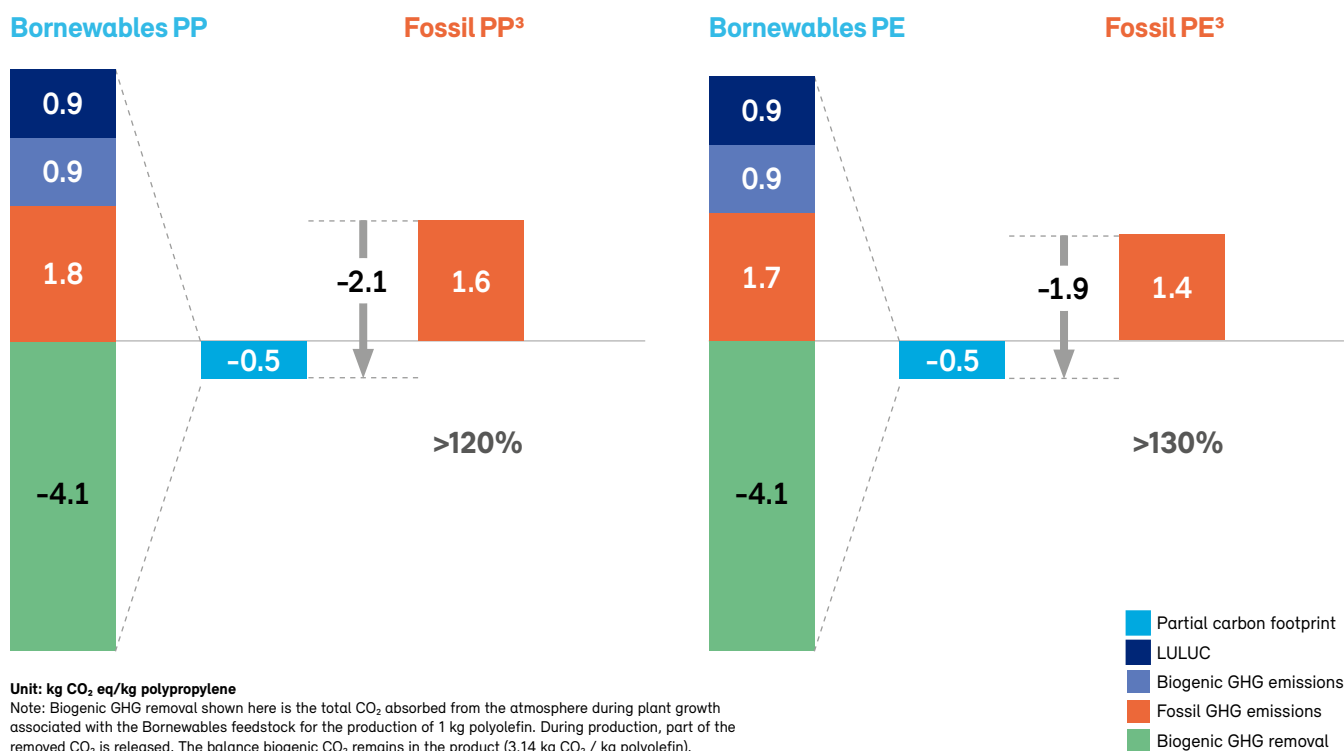
- All Borneables polyolefins are ISCC PLUS certified where raw materials used to produce the bio-based feedstock for Borneables are traceable to their point of origin
- In the production of the Borneables, the mass balance approach is used to save an identical volume of fossil feedstock by replacing it with sustainable feedstock
- By choosing the Borneables, you contribute to the sustainable sourcing of bio-based materials from carefully selected suppliers committed to sustainability.

The Borneables™ are proven to reduce greenhouse gas emissions

A cradle to gate Life Cycle Assessment (LCA) study, conducted according to ISO14040 and ISO14044, has shown that the Borneables contribute towards the mitigation of climate change by providing significantly lower greenhouse gas emissions compared to polyolefins made from fossil-based feedstock. The LCA was performed to understand the potential environmental impacts of Borneables polypropylene (PP) and polyethylene (PE) produced at Borealis' sites in Sweden, Finland and Belgium from both steam cracker and propane dehydrogenation routes, compared to polyolefins produced from fossil feedstocks at these sites. Comparing the Borneables polypropylene to conventional fossil-based polypropylene produced at the sites investigated, the LCA revealed that the partial carbon footprint could be reduced from 1,6 kg to - 0,5 kg CO₂ eq/kg PP (3,14 kg biogenic¹ CO₂ is stored in 1 kg PP) - a reduction of at least 2,1 kg CO₂ eq. For Borneables polyethylene compared to polyethylene manufactured with fossil-based feedstock via Borealis' processes, the partial carbon footprint (cradle-to-gate) is reduced by at least 1.9

kg CO₂ eq/kg polymer, from 1.4 to - 0.5 kg CO₂ eq/kg. (3.14 kg biogenic CO₂ stored in 1kg PE polymer). Furthermore, the Borneables are a lower-emissions alternative to fossil-based PP or PE no matter which end-of-life option is chosen. Even in the case of energy recovery, when the carbon stored in the product is released during incineration, the carbon footprint reduction still amounts to 44% compared to PP from fossil-based feedstock and 42% compared to PE from fossil-based feedstock. The analysis also revealed that in the production of the Borneables, sustainably sourced bio-based feedstock reduces fossil resource depletion by at least 73%.

The study also showed that the upstream burdens from cultivation and processing the waste and residue streams into the raw materials of our feedstock, cause higher impacts in acidification and eutrophication compared to polyolefins made from fossil-based feedstock. The environmental impacts on photochemical ozone creation potential were shown to be in the same order of magnitude as with the fossil comparator.

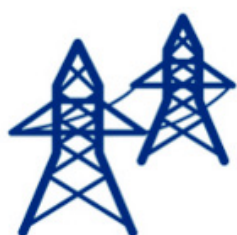


Impact category	Borneables PP	Fossil PP	Borneables PE	Fossil PE
GWP (kg CO ₂ eq. / kg polyolefin)	-0.5	1.6	-0.5	1.4
Abiotic resource depletion, fossil MJ / kg polyolefin	18	70	15	67

¹ Borealis has separately undertaken life cycle analysis of its fossil-based polyolefin portfolio reflecting latest oil and gas upstream LCI data
² Based on mass-balance
³ Based on Ecoinvent 3.6 database. Later database updates to oil and gas supply result in higher carbon footprint for fossil-based PO

When replacing one tonne of conventional PP with Borneables,™ at least 2.1 tonnes CO₂ eq could be saved

This is comparable to the greenhouse gas emissions of:



95% of average European household's annual energy usage¹



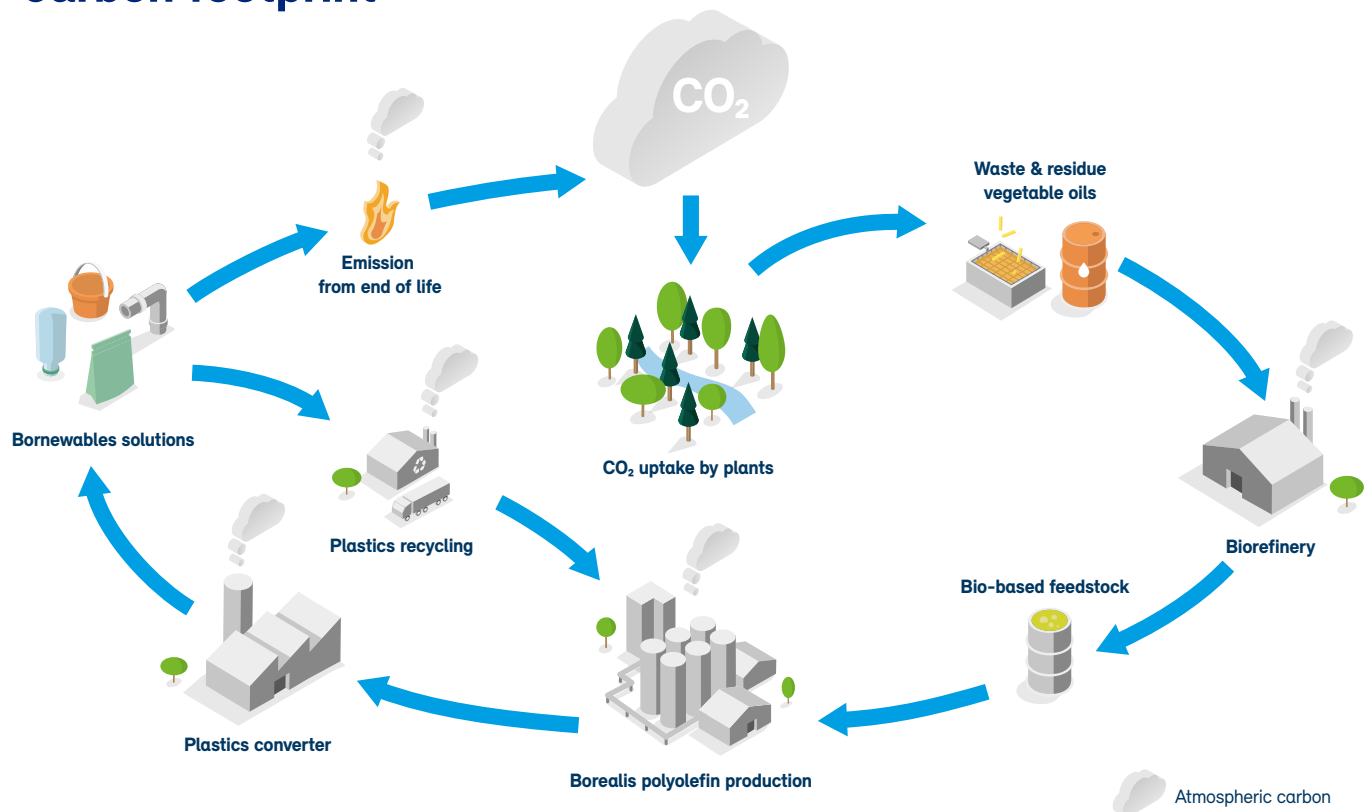
20 meat-lovers going vegetarian for a month²



charging **2,100** smartphones for a year³

¹ Electricity, Gas etc (2019, EU-27) per person: 726 kg/jr, 3.1 p./h.h
² meat-lover = 7.2 kgCO₂/day; vegetarian = 3.8 kgCO₂/day
³ Charging for 2hrs at 6W in EU (2018) at ~230grCO₂/kWh

The Borneables™ feedstock contains carbon absorbed from the atmosphere during the plant's growth phase, thereby reducing the carbon footprint



During the growth phase of the plant it absorbs CO₂ from the atmosphere and stores it in the biomass of the plant.



The CO₂ removed from the atmosphere is reflected as an emissions saving in the LCA calculation.



This biomass is then used to produce the feedstock for the production of our plastics.



When recycling or reusing the plastic, carbon will be kept in the loop instead of being released into the atmosphere at the End of Life (EoL).



Accelerating the transition to a circular economy

The Bornewables™ produced by replacing fossil-based feedstock with an identical volume of sustainably sourced bio-based feedstock, help our customers decouple from fossil resources.

And by offering the same portfolio, customers avoid switching costs and benefit from the same product quality and safety needed by most demanding applications, such as food packaging, automotive and healthcare.

In line with Borealis' EverMinds™ platform, which seeks to promote circularity through innovation, the Bornewables offer brand owners and converters the opportunity to:

Be a part of the circular revolution for plastic. Be a part of EverMinds.™

A platform aiming to unlock and accelerate circular progress for plastic. We are building a community to bring stakeholders, influencers and circular game-changers together. Uncompromising on quality and performance. Let's create new value that keeps giving back and create circular progress as one.



Show their own customers that they care about sustainability and help contribute to a better future.



Contribute to the sourcing of bio-based raw materials from carefully selected suppliers who are committed to sustainability.



Manufacture fully recyclable packaging solutions with a lower carbon footprint, but equally high performance, helping to meet their sustainability targets.



Trace bio-based raw materials to their point of origin, and ensure their sustainability, thanks to ISCC PLUS mass balance certification.



To find out how the Borneables™ can help reduce your carbon footprint, please visit borealisgroup.com/borneables

Borealis and Borouge solutions are enabling life's essentials

date of issue: September 2025

As Borealis is one of the world's leading providers of advanced and sustainable polyolefin solutions. In Europe, Borealis is also an innovative leader in polyolefins recycling and a major producer of base chemicals. We leverage our polymer expertise and decades of experience to offer value-adding, innovative and circular material solutions for key industries such as consumer products, energy, healthcare, infrastructure and mobility.

With customers in over 120 countries and head office in Vienna, Austria, Borealis employs around 6,200 people. In 2024, we generated a net profit of EUR 566 million. OMV, the sustainable chemicals, fuels and energy company with a focus on circular economy solutions, headquartered in Vienna, Austria, owns 75% of our shares. The Abu Dhabi National Oil Company (ADNOC), based in the United Arab Emirates (UAE), owns the remaining 25%.

In re-inventing essentials for sustainable living, we build on our commitment to safety, our people, innovation and technology, and performance excellence. We are accelerating the transformation to a circular economy of polyolefins and expanding our geographical footprint to better serve our customers around the globe. Our operations are augmented by two important joint ventures: Borouge (with TotalEnergies, based in the US).

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