

CASE STUDY

# Made-in-Finland value chain collaboration is making dairy packaging more circular

Borealis Borcycle™ C grade used in thermoforming process to produce more sustainable packaging for popular yogurt brand



In partnership with

NESTE



BOREALIS

بروج

Borouge







## Background

Dairy brands rarely have a direct link to Nobel Prize winners in chemistry. Yet Valio does. As a cooperative owned by farmers, Valio is Finland's largest food exporter. Its history of innovation dates back to the AIV silage method invented in the 1930s by Nobel winner Artturi Ilmari Virtanen, which Valio subsequently licensed to countries around the world. Today, Valio is drawing on its innovation heritage to make their operations and products more sustainable. The overarching aim is to ensure that their milk value chain is carbon neutral by 2035.

## Challenge

Working with a leading Finland-based plastic packaging company, Valio sought a more circular packaging solution for their popular yogurt brand, "Valio Kreikkalainen Jogurtti." It was imperative to ensure product safety and pack integrity while offering consumers the same appealing look and feel as conventional yogurt cups manufactured with virgin polyolefins. Adding urgency to the endeavor is the European Union's planned Packaging and Packaging Waste Regulation (PPWR). The PPWR calls for the incorporation of more post-consumer recycled (PCR) content in packaging and aims to set design requirements for recycle-ready packaging.

**"At Valio, we are committed to making our dairy production, processing and packaging more sustainable. Climate-smart packaging that reduces waste is essential to achieving circularity and reducing environmental and climate impacts as much as possible. We are glad to have worked closely with our partners in the region to find a solution that reflects the values and wholesomeness of our brand."**

**Juhana Pilkama**  
Head of Packaging Development, Valio

## Solution

A constellation of value chain partners operating in the Nordic countries quickly determined that a polypropylene (PP) grade from the Borcycle™ C portfolio was the ideal solution to meet Valio's needs: Borealis Borcycle™ C HC205TF, a drop-in replacement for PP made from virgin fossil resources. As virgin-level materials obtained in a chemical recycling process, Borcycle C grades are suitable for food-grade packaging and other demanding applications without any compromise in mechanical performance.

In the first step of the process, Borealis' upstream partner, Neste, is supplied with liquefied plastic waste that is otherwise hard to recycle. Neste then upgrades this into virgin-quality plastic feedstock at its Porvoo refinery in Finland. At the Borealis steam cracker in Porvoo, the chemically recycled feedstock obtained from Neste is used to produce the 100% recycled (mass balance approach) PP grade Borcycle C HC205TF. In the subsequent thermoforming process, the converter manufactures Valio yogurt cups from a mixture of 30% recycled PP (in the form of Borcycle C HC205TF), and 70% virgin PP.

The feedstock supply chain for this project – from Neste through to the production of Borcycle™ C – is certified end-to-end under the ISCC PLUS standard (International Sustainability and Carbon Certification), ensuring full traceability of the material through the chain of custody.

## Benefits

The positive results achieved by the Nordic partners in this value chain collaboration demonstrate benefits that can be extended to the wider rigid packaging industry. The advantages include:

- High-quality food-grade thermoforming solution with greater sustainability
- Drop-in solution that enables easy switch to more sustainable feedstock without compromising on technical performance
- Safeguarding of safety, quality and shelf life in food packaging applications
- Expansion of circular packaging options with appealing look and feel
- Incorporation of recycled content to effectively address PPWR requirements.



**“While we need to use both mechanical and chemical recycling to achieve circularity, the advantages of chemical recycling are clear and compelling when it comes to very low-quality waste and very high-quality end products. This project will contribute to turning chemical recycling from a promise into a valuable contribution to circularity for brands and packaging companies alike.”**

**Jeroen Verhoeven**  
Commercial Director Polymers and Chemicals, Neste Renewable Polymers and Chemicals



**“Our EverMinds™ approach to accelerating circularity combines transformative technologies such as Borcycle C with value chain cooperation to generate a wider range of circular packaging applications with added value. This project shows how the benefits of collaboration are spread across the entire value chain, from upstream partners like Neste to brand owners like Valio and their end consumers. We are especially pleased to offer all our partners new and viable options which will enable them to comply with the European Packaging and Packaging Waste Regulation (PPWR) now, and not later.”**

**Florin Sabau**

Global Commercial Director Consumer Products Rigid, Borealis



Photo courtesy of: @Valio

## Borealis and Borouge packaging solutions are making everyday life easier

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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 operations in over 120 countries and head offices in Vienna, Austria, Borealis employs around 6,000 people. In 2022, we generated a net profit of EUR 2.1 billion. OMV, the Austria-based international oil and gas company, 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 ADNOC, headquartered in the UAE), and Baystar™ (with TotalEnergies, based in the US).

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