





Media Release

Vienna, Austria | 15 April 2021, 10.00 CET

True to its EverMinds™ mind-set,
Borealis drives collaborative project
in Sweden to increase supply of
chemically recycled feedstock for
the manufacture of more circular
base chemicals and plastic products

- Grant awarded to Borealis for feasibility study with project partner Stena Recycling
- New chemical recycling unit at Borealis production site in Stenungsund,
   Sweden expected to commence operations in 2024
- Transformational Borcycle™ C portfolio uses chemical recycling to give polyolefin-based, post-consumer waste another life

Borealis has commenced a new project to secure an increased supply of chemically recycled feedstock for the production of more circular base chemicals and polyolefin-based products. A feasibility study for a chemical recycling unit to be established at the Borealis production location in Stenungsund, Sweden is now underway. Funded in part by a grant awarded by the Swedish Energy Agency, the study is being carried out with project partner Stena Recycling. Provided a successful feasibility study and final investment decision, operations are expected to begin in 2024. The unit will help accelerate the transformation to plastics circularity by enabling the replacement on a larger scale of fossil-based feedstock by integrating more chemically recycled feedstock via the mass balance model. Borealis Stenungsund has been ISCC PLUS certified since February 2021.

Borealis will also co-operate independently with Fortum Recycling and Waste on a project involving the sourcing of plastic waste to the chemical recycling unit; Fortum will apply for public funding for a feasibility study to this end.

# Advancing plastics circularity with chemical recycling

As a complement to mechanical recycling, chemical recycling has an important role to play in closing the material loop on plastics circularity. This is because plastic waste streams of lower quality can be recycled chemically into high-quality base chemicals (including olefins) and polyolefins. In fact, olefins produced from chemically recycled synthetic crude oil offer the same high quality as olefins produced from fossil fuel-based crude oil. This allows for the production of high-end polyolefin-based applications.

These include healthcare and food packaging materials subject to stringent quality and safety regulations which cannot always be met by mechanically recycled materials.

Borcycle<sup>TM</sup> C is the driving force behind Borealis endeavours in chemical recycling. Along with Borcycle<sup>TM</sup> M – in which "M" stands for mechanical recycling – it forms the <u>Borcycle<sup>TM</sup> portfolio</u> of all-round solutions for plastics circularity based on the technology suite Borcycle<sup>TM</sup> launched in 2019. Borcycle<sup>TM</sup> is transformational because it gives post-consumer plastics a new life; it continues to evolve thanks to innovation and value chain co-operation. Borcycle also is part of the <u>EverMinds<sup>TM</sup> platform</u> and its ambition for accelerating action on circularity.

The chemical recycling feasibility study is being carried out with Stena Recycling, the leading recycling company in northern Europe and expert in the development of sustainable circular solutions in all types of operations. A grant has been received from the Swedish Energy Agency to co-fund the study, which will evaluate the optimal technology for the chemical recycling unit and its integration in the Cracker at the existing Borealis production site in Stenungsund. Stena Recycling shall recover plastic waste and, after sorting to remove materials suitable for mechanical recycling, will deliver it to the new chemical recycling unit to be built by Borealis. Stena Recycling plans to invest in their own facilities to enable circular plastic solutions by producing feedstock of plastic waste to Borealis.

Fortum Recycling and Waste, a leading provider of recycling and waste management services in the Nordics, is also applying for public funding to carry out a feasibility study. The study would define the technical requirements for the pre-treatment of plastics, quality control, and the sourcing of suitable materials. It should also determine the necessary requirements for permitting and investments with the aim to produce feedstock from plastic waste to Borealis chemical recycling unit. This integration of waste management and processing directly into a steam cracker would be one of the first of its kind. Once operations commence as expected in 2024, Borealis would operate the unit.

"Borealis has set ambitious circular economy goals as part of our commitment to re-inventing for more sustainable living," says Martijn van Koten, Borealis Executive Vice President Base Chemicals and Operations. "The integration of Borcycle C into our cracker in Stenungsund, Sweden is a clear example of our circular efforts: built on innovation and collaboration, it enables us to supply sufficient amounts of chemically-recycled base chemicals and polyolefins to the market."

"In the true spirit of EverMinds we accelerate action to plastics circularity through collaboration," says Lucrèce Foufopoulos, Borealis Executive Vice President Polyolefins, Innovation & Technology and Circular Economy Solutions. "The cooperation with Stena and Fortum allows us to offer our customers and partners virgin-like polyolefins from chemically recycled post-consumer waste."

"The project we are carrying out together with Borealis at Sweden's first plastic recycling hub is a very exciting and important step in increasing the proportion of recycled plastic," says Martin Leander, Head of Commodities, Stena Recycling. "Through this co-operation we can contribute to increased material recycling and reduced climate impact by chemically recycling plastic waste that is currently incinerated. Plastic is an important material, and we now have additional opportunities to help our customers find circular solutions."

"Fortum is driving the transformation to a low-emissions energy system and optimal resource efficiency. Key parts of that development is creation of CO2 neutral feedstock where harmful substances are removed. Cooperation with industrial partners is core in Fortum's working model," says Christian Helgesson, CEO, Fortum Recycling and Waste. "Working with like-minded partners such as Borealis is the best way to accelerate the change. We are convinced that smart and collaborative solutions will improve resource efficiency."





Photo: Aerial view of Borealis production location in

Stenungsund, Sweden Photo: © Borealis

### **END**

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### **About Borealis:**

Borealis is one of the world's leading providers of advanced and circular polyolefin solutions and a European market leader in base chemicals, fertilizers and the mechanical recycling of plastics. We leverage our polymers expertise and decades of experience to offer value adding, innovative and circular material solutions for key industries. In re-inventing for more sustainable living, we build on our commitment to safety, our people and excellence as we accelerate the transformation to a circular economy and expand our geographical footprint.

With head offices in Vienna, Austria, Borealis employs 6,900 employees and operates in over 120 countries. In 2020, Borealis generated EUR 6.8 billion in sales revenue and a net profit of EUR 589 million. OMV, the Austria-based international oil and gas company, owns 75% of Borealis, while the remaining 25% is owned by a holding company of the Abu-Dhabi based Mubadala. We supply services and products to customers around the globe through Borealis and two important joint ventures: Borouge (with the Abu Dhabi National Oil Company, or ADNOC, based in UAE); and Baystar<sup>TM</sup> (with Total, based in the US).

## Borealis in Stenungsund, Sweden

Borealis, the only polyethylene (PE) producer in Sweden, is located in Stenungsund, where the company is the biggest employer in the city's industrial cluster, employing about 950 people. Principally focused on the wire and cable manufacturing, Borealis in Sweden supports customers with speciality plastics for some of the largest energy supply, oil and water pipeline projects in the world. The cracker plant in Stenungsund is one of the most flexible in Europe, using naphtha, ethane, propane and butane as feedstock. The cracker's main products are ethylene and propylene, which are used to produce high-technology high-density polyethylene (HDPE), low-density polyethylene (LDPE), and Borstar® PE products, primarily for pipe and wire and cable applications Borealis in Sweden also includes an Innovation Centre focused on polymer design, scientific services, and research and development (R&D) for our wire & cable industry solutions. In 2018 the new High Voltage cable testing facility in Stenungsund was inaugurated to meet the growing demands in society for high capacity wire and cable.



#### About Borealis EverMinds™

Launched in 2018, EverMinds is an umbrella brand uniting the wide range of Borealis activities and initiatives aimed at making plastics more circular. As a dedicated platform, EverMinds promotes a circular mind-set among all Borealis stakeholders. The platform encompasses proprietary Borealis technologies as well as established brands such as Purpolen™ and Dipolen™. It facilitates deeper collaboration between Borealis and its partners in order to develop innovative and sustainable polyolefins solutions based on the circular model of recycling, re-use and design for circularity. EverMinds also extends to pioneering corporate programmes such as Project STOP, and engagement in industry initiatives like the Polyolefins Circular Economy Platform (PCEP), and Project CEFLEX.

#### **About Fortum Recycling and Waste**

Fortum is a European energy company with activities in more than 40 countries. We provide our customers with electricity, gas, heating and cooling as well as smart solutions to improve resource efficiency. We want to engage our customers and society to join the change for a cleaner world. Together with our subsidiary Uniper, we are the third largest producer of CO2-free electricity in Europe. With approximately 19,000 professionals and a combined balance sheet of approximately EUR 69 billion, we have the scale, competence and resources to grow and to drive the energy transition forward. Fortum's share is listed on Nasdaq Helsinki and Uniper's share on the Frankfurt Stock Exchange.

### **About Stena Recycling**

Stena Recycling is a leading recycling group and a partner for all types of business in developing sustainable circular solutions. Together with our customers we create a sustainable tomorrow, and we care for resources by providing world leading circular solutions. Stena Recycling is part of the Swedish-based Stena Metall Group with six business areas, annual net sales of MSEK 23 658, 3 500 employees and operations at around 200 locations in nine countries

#### For more Information:

www.borealisgroup.com www.borealiseverminds.com www.fortum.com www.stenarecycling.com

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