

CASE STUDY

Uponor and Borealis help create a lower-carbon water and sewage infrastructure in Itäranta, Finland



In partnership with

uponor

 **BOREALIS**

بروج
Borouge



Uponor Blue pipes made of ISCC PLUS-certified polyolefins in the Borneables™ portfolio are as robust and durable as conventional materials



Accelerating Action
on Circularity

Background

The district of Itäranta is located in the unique “Garden City” of Tapiola in Greater Helsinki, Finland. Built by a non-profit organization in the 1950s as a self-supporting community for around 12,000 residents, Tapiola is characterized by low density housing and expansive green spaces. After 70 years, however, the district’s water supply and sewage networks were in poor condition. Its stormwater management system was in urgent need of an overhaul. Moreover, due to the construction of several new tower blocks, additional capacity was required for water supply and other water management services.

Challenge

Helsinki Regional Environmental Services (HSY), which provides water services to over one million inhabitants of the Helsinki metropolitan area, made the decision to renovate the entire water, sewer, and stormwater infrastructure in Itäranta. The trunk line and service pipes (to around 20 individual properties) for potable water were to be replaced over a distance of around one kilometer. The stormwater network would also be renovated over a slightly shorter distance. Around Helsinki there are rock formations in the ground, where the new trenching is done by stone crushing and wedging step by step rather than blasting due to the close proximity of high value buildings. The replacement networks would have to be robust and durable enough to last another 50 to 100 years, yet also have a significantly lower carbon footprint. In short, HSY sought a reliable and high-quality solution which was aligned with the “green” values of the area and its residents.



Solution

Uponor, a trusted HSY partner for decades, supplied water, sewer, and stormwater pipes from its sustainable Uponor Blue product range. The use of Blue pipes, developed in collaboration with Borealis, can reduce the lifetime carbon footprint of infrastructure products by up to 70% based on calculations made by Uponor. This is because Blue pipes are composed of over 55% raw materials obtained from certified renewable feedstock. When it comes to durability and robustness, they exhibit the same high performance properties as pipes produced using conventional raw materials.

For the Itäranta project, Uponor Blue pipes were made using ISCC PLUS-certified Borneables™ polypropylene (PP) and Borneables™ polyethylene (PE) PE100-RC (resistant to crack) grades. Based on the mass balance approach, Borneables polyolefins are made using renewable feedstocks derived entirely from waste and residue streams which are traceable back to their point of origin. Uponor produced the Blue pipes at its ISCC-certified plant in Nastola. The short length of the transportation journey to the installation site (under 150 km) further reduced the project's carbon footprint. The lightweight pipes are also easier to install than the heavier PVC materials commonly used in the municipality.

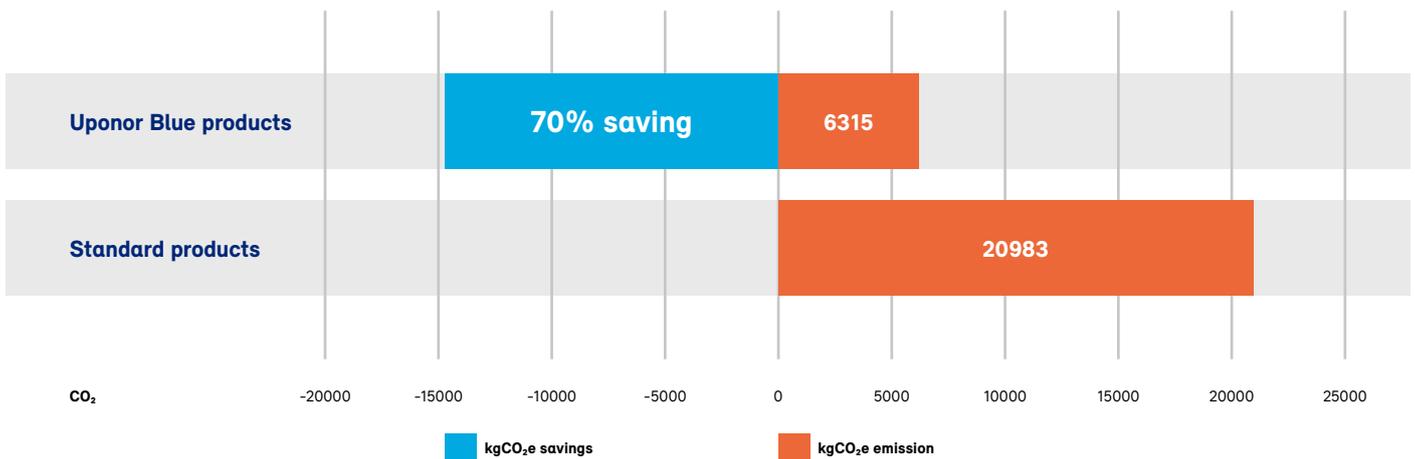


Results

The Itäranta project, whose completion is expected in the course of 2024, marks the first time HSY has used sustainable Uponor Blue pipes – and the carbon savings are considerable. By replacing Uponor's conventional Ultra Classic drains, IQ stormwater drains, and Profuse RC pressure pipes with comparable products from the Blue range, the carbon footprint will be reduced by 70%. This is not only good for the environment, but also for HSY itself, which aims to be carbon neutral by 2030.

Carbon footprint of stormwater pipe materials CO₂ savings thanks to Uponor Blue Products

Graph: Carbon footprint calculation for the Tapiola project ©Uponor



“In leading the way to sustainable infrastructure development, Uponor is setting new benchmarks in quality and reliability for pipes made of renewably-sourced materials. Ensuring longevity and performance over decades is in fact a core aspect of sustainability. The success of this project carried out with our partner HSY in Itäranta shows that we are well on our way to offering sustainable Blue alternatives for 50% of our product portfolio by 2027.”

Ilari AhoVP
Sustainability and Regulatory Affairs, Uponor

“The Itäranta project centered on Borealis Bornewables and Uponor Blue is a prime example of our EverMinds™ approach at work as we accelerate action on circularity. By collaborating with trusted partners and leveraging our experience and know-how, we are producing sustainable solutions that benefit communities and the environment in the long term. Together with Uponor, we are enabling life’s essentials.”

John Webster
Global Commercial Director Infrastructure, Borealis

Borealis and Borouge infrastructure solutions are enabling life’s essentials

date of issue: April 2024

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).

borealisgroup.com | borealiseverminds.com

Borealis AG
Trabrennstr. 6-8, 1020 Vienna, Austria
Tel +43 1 22 400 000 - Fax +43 1 22 400 333
borealisgroup.com

Borouge Pte Ltd Sales and Marketing Head Office
1 George Street 18-01, Singapore 049145
borouge.com

