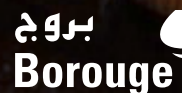
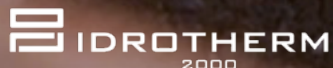


CASE STUDY

Italgas, Idrotherm 2000, and Borealis team up to upgrade Italy's gas network using the Bornewables™

In partnership with



Background

Italgas is a network technology company and the primary gas distributor in Italy and Greece, ranking as the third largest in Europe. With over 180 years of history, Italgas has been a crucial part of Italy's energy sector, and currently manages a network spanning more than 83,000 kilometers. Its mission is to promote the role of natural gas in the energy transition and in achieving the European Union's climate targets.

Idrotherm 2000, with over 50 years of history, is a leading producer of polyethylene (PE) and polypropylene (PP) pipes in Europe for the transportation of water, gas, telecommunications, and hydrogen. The company has a longstanding commitment to innovation and sustainability.

Borealis is a global market leader in providing innovative and circular polyolefin solutions and has a strong focus on accelerating the transformation to a circular economy. It has a long history of partnership with the infrastructure sector and is an expert in advanced PE and PP materials for pipe systems.

“This project reflects our longstanding commitment to sustainability and innovation. We’re proud to be frontrunners in using renewable materials in our gas network – a move that both reduces our environmental impact and improves the performance of our systems. We’re thankful to our partners for making this possible.”

Raffaella Marcuccio
Italgas Procurement and Material Management Director

“Idrotherm 2000 is a market leader in the production of polyethylene and polypropylene pipes. We use renewable raw materials to produce Renovation VRC BS pipes aligns with our commitment to supporting the ecological transition by offering sustainable products that address the new and growing awareness and respect for the planet’s resources.”

Raffaella Sartini
Idrotherm 2000 External Relations Manager



Challenge

In 2017, Italgas embarked on a large-scale project to modernize and digitize the gas distribution network. Its goal is to replace existing infrastructure, improve the performance and sustainability of new networks, and significantly reduce CO₂ emissions.

Part of this initiative focused on updating the low-pressure gas network in Turin, replacing approximately 800 meters of old cast iron pipes with modern PE100-RC pipes along via Filadelfia and via Nuoro.

The challenge was to find gas pipe materials that would not only be durable and reliable but also promote a more circular economy. The material also had to comply with existing standards without requiring new approvals or revalidations.



Solution

Italgas organizes workshops with strategic suppliers focused on innovation and circular economy topics. During these workshops, Italgas collaborated with Idrotherm 2000 and Borealis to develop state-of-the-art PE100-RC pipes, branded as Renovation VRC® BS. These next-generation high-density polyethylene (HDPE) gas pipes are produced by Idrotherm 2000 at their facility in Castelvechio Pascoli, Lucca, Italy, using Borealis BorSafe™ Bn HE3490-LS-H.

This grade is part of the Borneables™ portfolio of ISCC PLUS (International Sustainability & Carbon Certification)-certified premium polyolefins made using sustainably sourced renewable feedstocks. This feedstock is derived solely from waste and residue vegetable oils that are no longer suitable for human consumption and, as such, does not impact food security.

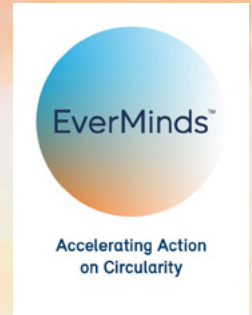
The new PE100-RC Renovation VRC BS pipes were installed using recycled backfill materials, including sand and stabilized mixed materials derived from construction and demolition waste.

The pipes meet the EN 1555 standard, demonstrating exceptionally high stress crack resistance and compatibility with the latest installation techniques. They offer high-level performance, including excellent flexibility and gas pressure resistance, even in welded pipe systems. Since the Borneables grades are chemically identical to fossil-based materials, no further approval or revalidation was required.

Benefits

The pipes made by Idrotherm 2000 using BorSafe Bn HE3490-LS-H offer outstanding properties and performance, making them suitable for modernizing the Italian gas network. This demonstrates the potential of renewable plastics made from non-fossil raw materials to reduce the carbon footprint of infrastructure projects.

The move represents a significant and tangible step toward sustainability in the construction industry, especially for gas, hydrogen, and water distribution pipe systems.



“This initiative highlights Borealis and Borouge’s dedication to enabling life’s essentials through our support for the infrastructure sector. Through this collaboration with Italgas and Idrotherm 2000 in the spirit of EverMinds™, we are proud to have taken another significant step towards a sustainable future.”

John Webster
Borealis Global Commercial Director Infrastructure

Borealis and Borouge infrastructure solutions are enabling life’s essentials

date of issue: August 2024

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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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