

GREAT BUBBLE BARRIER – PREVENTING PLASTIC POLLUTION FROM FLOWING INTO THE OCEAN IN THE NETHERLANDS

Since 2019 the first [Great Bubble Barrier® system](#) has been operating in the Westerdok canal in Amsterdam, Netherlands. The bubble barrier catches plastic over the full width and depth of rivers and prevents it from ending up in the ocean.

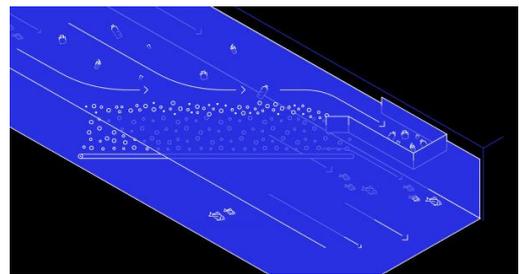
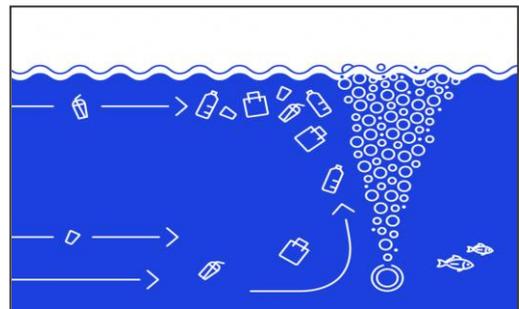
[The Bubble Barrier® system comprises three main components](#): the bubble curtain, the compressor, and the catchment system. The three components are designed to work together to create the optimum solution for each location. The bubble curtain operates by pumping air through a perforated tube on the bottom of the waterway. The bubble curtain creates an upward current which directs plastic to the surface. By placing the Bubble Barrier diagonally across the river, the natural flow of the water will push the plastic waste to the side and into the catchment system. The catchment system is designed to work in harmony with the bubble curtain to collect and retain plastics. Following collection, plastics will be removed for processing and reuse.

The Bubble Barrier technology has been developed by a startup company, co-founded in the Netherlands by Francis Zoet, Anne Marieke Eveleens and Philip Ehrhorn, with the aim of contributing to removing plastics from the canals and [reducing the global problem of ocean pollution](#). Each year, up to 80% of the 8 million tons of plastic reaching the ocean first flow along the rivers and canals. Plastic particles are found everywhere in nature, including in fish and drinking water, being harmful to people, animals and the environment.

Committed with this great challenge and starting from the idea that pumping air through a tube with holes installed on the riverbed, the wall of bubbles would push plastic to the surface and it would be ready to be collected, the start-up company has designed the system as a solution applicable in canals and rivers of many different contexts. Starting in 2016, the company created a first 10-m prototype of Bubble Barrier and, later in the year, they successfully installed a 180-m pilot in the IJssel River.

By November 2019, the first long-term Bubble Barrier was ready to be installed on the Westerdok one of Amsterdam's many canals. The Bubble Barrier was commissioned by the Amstel, Gooi and Vecht Water Management Board and the Municipality of Amsterdam. The system is powered by renewable energy from the city of Amsterdam.

The Bubble Barrier is a curtain of air bubbles which is created by pumping compressed air through a perforated tube which is placed on the bottom of the canal. The Bubble Barrier does not only stop floating plastic but also brings plastic in suspension to



the surface. The natural flow of the water in the Westerdok and the diagonal placement of the Bubble Barrier guides plastic into the catchment system on the side of the canal. The Bubble Barrier works 24 hours a day, 7 days a week, does not interfere with shipping and the passing of wildlife and can be deployed across the entire width of rivers or canals.

The Bubble Barrier has been extensively tested and has demonstrated in various previous pilots that plastic from 1 mm and larger can be collected from flowing waterways. The previous pilots also demonstrated that the Bubble Barrier intercepts 86% of floating test material in inland water. The Great Bubble Barrier® also provides invaluable information for research into the impact of microplastics. The effect on the smaller microplastics of 0.02 mm to 0.5 mm is currently being investigated in a study with purified wastewater at the treatment plant of Wervershoof in the Netherlands.

This system can be used in any river anywhere in the world to reduce plastic pollution and the Great Bubble Barrier® start-up company is engaged in the search for new partners and sponsors to apply its innovative technology.

For example, in 2021 the Bubble Barrier system is implemented as part of [MAELSTROM - Marine Litter Sustainable Removal and Management](#), a European Union funded project designed to develop and test sustainable technological solutions for the removal and treatment of litter within river ecosystems, intercepting litter before it enters the sea. In this project, the Great Bubble Barrier forms a consortium together with 13 other European parties. In summer 2022, the project will be implementing a new Bubble Barrier in the Porto region in Portugal, to prevent riverine plastic pollution from flowing into the Atlantic Ocean. The MAELSTROM project will also provide solutions to sort and recycle the collected marine litter and give it new strategic uses in accordance to the Circular Economy Action Plan of the European Union.

The Great Bubble Barrier website presents the [supporting and research partners](#) that have made an important contribution to the creation of the Bubble Barrier system and the new technologies, through knowledge, experience and networking. The company invites other interested actors to join their work to contribute or collaborate.

The innovative technology adopted and the results achieved by the Great Bubble Barrier have been widely disseminated by international organizations and initiatives specialized in environmental issues through articles and interviews.

To know more

[The Great Bubble Barrier website](#)

[Press-release](#)

[Technology - The Great Bubble Barrier®](#)

[The Great Bubble Barrier - Facebook](#)

[The Great Bubble Barrier | UNESCO Green Citizens](#)



[Article in weforum.org](#)

[Article in Plastic Soup Foundation website](#)

[Article and video in CNN](#)

[Article in allsustainableolutions.com](#)

[Video in Eco India](#)

[Bubble Barrier in dutchwatersector.com website](#)

[Bubble Barrier in Heroes of the Sea website](#)

[Maelstrom Project \(maelstrom-h2020.eu\)](#)

