

Successful completion of the “PSLoop Project”

The EPS industry successfully completes the PSLoop project and demonstrates that the recycling loop for EPS with the legacy flame retardant HBCD can be closed. With this great achievement, the PS Loop stakeholders have proven that this innovative technology is capable of successfully removing HBCD from EPS demolition waste, contributing to a circular economy.

Over the last years, the EPS industry has invested very significant resources and effort into the ‘PSLoop Project’, a demonstration plant in Terneuzen (NL) designed to prove that the proprietary solvent-based recycling technology can successfully remove the legacy flame retardant HBCD from Expanded Polystyrene (EPS) waste. PSLoop has managed to continuously run its production process in the medium-scale demonstration plant, producing ‘LoopPS’ recyclate.

The project managed to fulfil the UN requirements for UTC (unintentional trace contaminant). This means the PS Loop technology has proven to be fully capable of recycling EPS-containing HBCD waste. This is crucial as it enables ‘LoopPS’ to meet the regulatory requirement for reuse in EPS/XPS construction applications. With this great achievement, the PS Loop stakeholders have proven that this technology successfully removes HBCD from EPS demolition waste and contributes to a circular economy. The produced ‘LoopPS’ recyclate has been successfully converted into new EPS raw material, and subsequently moulded into insulation boards. Hence it has been demonstrated for the first time that closed-loop recycling is possible with deconstruction EPS waste containing HBCD. The ‘PS Loop technology’ has thus proven its technical readiness level for investment in future commercial-scale recycling plants. The pending milestone of the destruction of the removed HBCD (as required by the Basel Convention Technical Guideline) with the recovery of bromine for use in the production of sustainable polymeric FR will be finalized over the coming months.

The successful demonstration of the PSLoop technology has resulted from good cooperation of a number of EPS raw material producers, converters and with a flame-retardant manufacturer, and in particular, is the result of the dedication, hard work and commitment of all the staff at PS Loop and the GEC Group (German EPS Converters).

Having achieved the main objective, the stakeholders have now decided to cease production. Like several other recycling companies in Europe, PSLoop has been affected by high energy costs, increasing bureaucratic requirements and the uncertainty of legislation for handling waste and in particular for cross-border waste shipments. The situation is exacerbated by the industry facing increasing imports of virgin raw materials stemming from non-European countries undercutting European health, safety, and environmental standards.

Future investment in the use of the proven “PSLoop technology” in commercial-scale recycling plants will also likely require clearer organisation and regulation of demolition waste (mandatory

collection and sorting along with an enforced ban on landfill of EPS waste) in order to guarantee sufficient HBCD containing EPS waste feedstock.

The entire EPS industry remains committed to recycling EPS, and in particular to the innovative solvent-based (physical recycling) process which we believe still has the potential to revolutionise the circular economy for plastics. EPS is 100% recyclable and is already widely recycled all over Europe. It is our goal to significantly further increase recycling rates. We embrace the entire range of available technologies for recycling, and our members are investing in various technologies. We believe that for recycling there is no “one-size-fits-all” solution, but rather bespoke approaches are needed as the structure and origins of waste are very diverse. Preference should be given to the least energy-intensive solution appropriate for the quality of waste under consideration.

About PSLoop

PSLoop plant Terneuzen is owned by the German GEC Group, which is held by three shareholders: Karl Bachl Kunststoffverarbeitung GmbH & Co. KG, Brohlburg Dämmstoff und Recyclingwerke GmbH & Co. KG, and Rygol Dämmstoffe Werner Rygol GmbH & Co. KG

PSLoop Raw Material Suppliers partners have helped drive the project.