

Welcome to the PolyStyreneLoop Foundation Newsletter!

The PolyStyreneLoop Foundation is a non-profit organization set up under Dutch law. Its objective is to bring a significant contribution to the implementation of a circular economy, by demonstrating via a large-scale demo plant a closed-loop route for the recycling of PS (polystyrene) insulation waste foam and the recovery of bromine.

Members of the initiative include industry actors across the whole polystyrene foam value chain: PS foam manufacturers, raw material and additives suppliers, foam converters, and recyclers.



An active contribution to the circular economy

The demo plant is planned to be built at the ICL-IP industrial site in Terneuzen (NL); it will use the solvent-based CreaSolv® process to recover polystyrene into a PS recyclate of high quality, to be used among others as raw material for new foams. The process will also safely remove the flame retardant HBCD (classified as a SVHC and POP), that will then be destroyed within the neighboring hazardous waste incinerator with a Bromine Recovery Unit (BRU), thus ensuring the safe recovery of its valuable bromine component.



The project is meant to demonstrate that the PS value chain can meet the fundamental requirements of a circular economy: by way of a closed-

loop system, ensure the re-use and recycling of materials in a way that should be technically, economically and environmentally sustainable.

PolyStyreneLoop demo plant - project update

Legal form

The PolyStyreneLoop demo plant will be set up as a cooperative company, involving cooperators from across the PS value chain.

Financing steps

Funding for the 6-7 million € investment in the demo plant has started;

- Bank financing is secured for 80%

- Application for EU funding under the LIFE 2020 program (reply in March 2017)
- Initiation of cooperators' financing via cooperative shares
- Exploration of crowd-funding opportunities in addition to bank funding.

The economic feasibility and viability are a crucial factor for industrial scale material recycling; the detailed business plan made for the demo plant confirms such feasibility, but also points to some challenges in this respect, such as the availability of waste PS foam, and the logistics transporting it during the first few years of operation. These elements are a priority for the PolyStyreneLoop Foundation, and will be addressed in parallel to the engineering of the demo plant to ensure that the plant capacity can be sufficiently exploited also in the first years.

Engineering

The EPC Group, a recognized plant engineering and construction provider, has drafted a pre-basic engineering plant model. The actual engineering phase of the demo-plant will start in 2017, after full funding has been secured. The plant is scheduled to start operations in 2018.

Relevant regulatory developments

Basel Convention

One of the objectives of PolyStyreneLoop is to ensure that the CreaSolv® process as pre-treatment for the handling of HBCD-containing waste is being considered



in the framework of the UNEP Basel Convention Technical Guidelines. The PolyStyreneLoop project was therefore presented to the Basel Convention's OEWG-10 meeting in Nairobi in June 2016.

The PolyStyreneLoop dissolution process was proposed as a pre-treatment step to be included in the General Technical Guidelines TG's and the HBCD Guideline. Those guidelines already mention state of the art hazardous waste incineration as an appropriate destruction technique and the ICL Bromine Recovery Unit is recognized as such. The next UNEP Basel COP meeting will be in Geneva in April 2017.

Further to this, the Dutch authorities have commissioned an inventory of PS foam waste streams and their HBCD content, which will be carried out by an

external consultancy. This should help both industry and Dutch and European regulators to have a better overview of the medium and long-term prospects for the -management of HBCD-containing PS waste foam.

Upcoming activities

A Workshop will be held in Brussels on 18th October for the direct stakeholders and sponsors of the project.

Communication

The project was presented at the Dioxin2016 and ISWA2016 conferences held respectively in August and September. Another presentation is planned for the February 2017 Rotterdam conference on Circular Economy. The project website is currently under construction, and will be operational in the course of November 2016.

The PolyStyreneLoop Network

Foundation partners PolyStyreneLoop

ICL-IP, Unipol Holland, Stybenex, Sunpor Kunststoffe, Synbra Technology.

Financing partners

EAE (European Association of ETICS), EFRA (European Flame Retardant Association), EUMEPS (European Manufacturers of EPS), Exiba (European XPS Association), IVH (Industrievereinigung Hartschaum, Germany), FVWDVS (Fachverband Wärmeverbundsysteme Germany), PlasticsEurope EPS MC (BE), Stybenex (Netherlands)

Dedicated project partners

DeVries Recycling (NL), ECOFILL Recycling (BE), Fischer Gruppe (D), Isobouw (NL,D), KRAS Recycling (NL), Total (FR), Unidek (NL), Suez Recycling (NL/FR), Synthos (PL)

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For comments or feedback please mail us to
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