Demonstration of an innovative system for recycling absorbent hygiene products (RAHP) to plastics

Publieke samenvatting / Public summary

Aanleiding

In the Netherlands, approximately 400 kton of post-consumer absorbent hygiene products (AHP) is incinerated every year. The main reasons for a lack of substantial recycling solutions with concern to post-consumer AHP-material are the complex composition of the material, in combination with the presence of pollutants such as drug residues and pathogens. As a direct consequence of incineration, the current AHP carbon footprint is relatively high considering the material's lifetime. Incineration (as a waste processing route) has a negative environmental impact and is not in line with the national and European policy goals. These goals are aiming for the closing of industrial chains to reduce both the resource demand and CO2-emissions. As one of the largest waste-to-product companies within the Netherlands, Renewi is a relevant actor within the transition towards a circular economy. The current lack of substantial recycling solutions for post-consumer AHP does not comply to Renewi's strategy as outlined in their sustainability report, in which it is stated that 75% of all the waste handled by Renewi should be recycled by 2025.

Doelstelling

The goal of this project is to demonstrate and validate the innovative FaterSMART technology in a real-life environment for large scale rollout as a solution for the recycling of post-consumer AHP. In general, Renewi aims to contribute to a significant

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Algemene informatie / General information

Penvoerder / Secretariat
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CO2 reduction by recycling valuable AHP components. Renewi expects to achieve her goal because of a variety of reasons. First of all, the separated collection of post-consumer AHP already takes place in the Netherlands. Secondly, the (expected) legislative push and market pull experienced by Renewi through market parties and policies confirm the need for recycling. Thirdly, the maturation of FaterSMART through this demonstration project strengthens the trust in the effectiveness of the technology. This demonstration project offers multiple learning opportunities for Renewi with regard to the proper and safe treatment of post-consumer AHP-material.

Korte omschrijving

The FaterSMART technology is considered a TRL 7/8 innovation. Five work packages are defined to implement the innovation at Renewi: technical project management, engineering and procurement, permitting and contracting, construction, and commissioning and validation. During the engineering and procurement phase, an integral design will be composed and the suppliers and contractors will be selected. The permitting and contracting phase will result in granted permits and signed contracts with suppliers and contractors. A fully realized installation ready for commissioning and validation is delivered during the construction phase. Finally, the commissioning and validation phase will result in a fully functional FaterSMART-demonstration plant.

Resultaat

The end result of the project is a fully functional demonstration plant with a capacity of 30 ktons a year for processing post-consumer AHP. The system is unique and new in the Netherlands and will provide the following results: - The effective recycling of plastics, cellulose and SAP into high-grade secondary raw materials for further processing into new products. About 2.25 kton plastics, 4.5 kton cellulose and 2.25 kton SAP are expected to be recycled every year. - A CO2 reduction of 95.1 kton within a five year period, in comparison to the conventional incineration route

for post-consumer AHP. The environmental benefit will take place on site at Renewi. - A continuous improvement on the societal topics human health, ecosystems and resources. The demonstration project scores at least 6 times better than incineration on all these topics. - A validated business case and insights into a clear vision for further rollout of the FaterSMART technology. - An effective increase in the processing and re-use of waste is achieved.

De data in deze applicatie is afkomstig van de Rijksdienst voor Ondernemend Nederland (RVO) en wordt in samenwerking met de Topsector Energie ontsloten.
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