

RECALL

Recycling of complex AHP waste through a first time application of patented treatment process and demonstration of sustainable business model

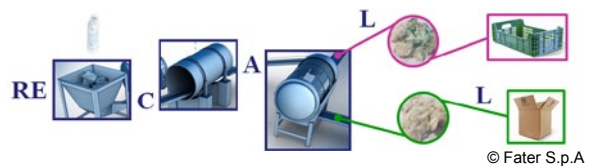
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INFORMATION ON THE ECO-INNOVATIVE SOLUTION PROVIDER

This eco-innovative solution is the output from the project titled “Recycling of Complex AHP waste through a first time application of patented treatment process and demonstration of sustainable business model” co-funded by the European Commission within the framework of the Competitive and Innovation Program. This solution has been developed by a team coordinated by Fater (IT), in partnership with Contarina spa (IT), Comune di Ponte Nelle Alpi PNA (IT), and Ambiente Italia (IT). The project was completed in 2015.

SHORT DESCRIPTION OF THE ECO-INNOVATIVE SOLUTION

The innovation consists of a new specifically designed steam autoclave process for AHP waste treatment. Absorbent Hygiene Products (AHP) is the category name for nappies, sanitary protection pads, tampons, panty liners, adult incontinence products and personal care wipes. The RECALL system provides AHP-separated collection and an autoclave treatment process where AHP will be sanitized, de-composed and dried, leading to the recovery of its valuable components, mostly high-quality cellulose and specialty plastics. The outputs of the process are high-value secondary raw materials (plastic and cellulose), as AHP plastic and cellulose components are specialty materials of high technical and commercial value, e.g. high-grade polyethylene and polypropylene

INDUSTRIAL SECTOR – MARKET SEGMENT AND ACTUAL APPLICATION IN INDUSTRY

95 Administration of Environmental Quality and Housing Programs

INDUSTRIAL CLASSIFICATION - NACE CODE;

38 Waste collection, treatment and disposal activities; materials recovery

1. DESCRIPTION OF ECO-INNOVATIVE SOLUTION

Technical aspects of the eco-innovative solution

The key element of this innovation is an entire industrial plant to recycle Absorbent Hygiene Products. The process needs collected post-consumer hygiene products. The materials will be stored, steam-sterilized so as to kill all pathogens e.g. E. coli and to eliminate odours. Then they are separated through a mechanical process and processed into high-value secondary raw materials (plastic and cellulose), as AHP plastic and cellulose components are specialty materials of high technical and commercial value.

High-grade polyethylene and polypropylene in the form of plastic pellets and cellulose, which can be used as feed-stock for the packaging and paper industry, are available to be sold after the process.

The solution provider offers the delivery of the entire plant. Benefits include the significant reduction of post-consumer AHP, which was formerly sent to landfill as well as the selling of plastic flakes and cellulose.

Economic and environmental benefits of the eco-innovative solution

Costs of the solution – Equipment cost 4€ Mio, excluding building & infrastructure, for a plant to process 8,000 t/yr. Benefits: Treatment revenue (“Gate Fee”) or avoided disposal costs, the selling of plastic and cellulose and, since the process is carbon negative from an LCA standpoint, incentives for carbon credits wherever present. Minimum quantity to be processed per year is 8,000t, of which 35% will result in cellulose and 15% in plastic. Payback is achieved within 3.5 years. In Italy, the post-consumer AHP waste represents about 3% of Municipal Solid Waste (MSW) and about 0.15% of total waste.

2. AVAILABILITY OF THE ECO-INNOVATIVE SOLUTION AND BUSINESS PARTNERSHIP

Market readiness, Trade mark, existing market coverage, commercialization strategy

Trade mark available: N/A

Currently there is only one plant in Northern Italy, processing 8,000t of post-consumer AHP annually.

Requirements to adapt the solution to the local market and potential applications/market size

Post-consumer Absorbent Hygiene Products are the same all over the world. The main requirement is a functioning, separate collection system for this kind of waste.

On-site after-sales services support and the technical assistance requirements

From technology owner in Italy

Targeted local business partners

Waste management facilities (both collection and operation)

Type of local business partnership sought

Licensing