

From a 'me too' to a game changer



SUSTAINABLE MODELS OF GROWTH WILL BE REWARDED IN THE NEAR FUTURE, BELIEVES THE TEAM AT POLYGENTA



1.5 million Bottles
Number of PET bottles converted by Polygenta's Nashik plant per day to produce roughly 10,000 MTs per annum of sustainable premium PFY



Hundreds of billions of plastic bottles go to waste every year after they have served their purpose. At Polygenta, we love plastic bottles, we view them as the fruit of brilliant human ingenuity and of large capital investment. Do we really consider the bottle as a waste when we drink from it? No, instead we believe that these bottles are a formidable source of plastics which can be recycled back to bottles, yarns and fabrics or films.

So, Polygenta exist because we own a technology and a large commercial plant (in Nashik, Maharashtra, India) where we convert every day 1.5 million of clear and coloured bottles. Our recycled, sustainable polyester is cost competitive with its 'virgin' equivalent, produced by the petrochemical industry from oil. We believe that low cost is necessary to sustain an environmen-

tally friendly business and products. Our technology allows us to be low cost producer of recycled polyester, with a level of quality assurance and performance comparable to the 'virgin' polyester, because we can scale our plants and convert cheap polyester waste (such as coloured bottles or fabric waste).

Based on an independent life cycle analysis, the primary energy demand to manufacture polyester polymer using the ReNEW process is lower than consumed when conventional virgin petrochemical feedstock is used.

We believe that sustainable models of growth will be rewarded in the near future, as quality management processes have been introduced 40 years ago by the Japanese industry in particular and have become the norm. Our goal is to add a dimension of sustainability to the growth of the virgin polyester industry: we see ourselves as an enabler of the existing polyester business with a humble but tangible contribution to its sustainable growth.

Polygenta Technologies Ltd (PTL) is a leading manufacturer of Polyester Filament Yarn (PFY), which uses post-consumer PET bottles



(i.e. a high-grade polyester) as its feedstock. Polygenta's plant located in Nashik (Maharashtra, India) converts 1.5 million bottles per day to produce roughly 10,000 MTs per annum of sustainable premium PFY. PTL also has plans to expand this capacity significantly.

We achieve this with our proprietary 'ReNEW' process. ReNEW chemically 'de-constructs' the long chain 'poly-ester' hard plastic that PET bottles are made of into their original 'building blocks'

of individual esters in liquid form. After high purity filtration of this liquid, these esters can be substituted for high-grade conventional polyester petrochemical feedstock refined from crude oil (PTA and MEG).

With its unique approach to recycling PET bottles, fundamentally different from the prevalent 'mechanical technologies', ReNEW has a number of advantages in terms of energy, effluent, water use, and product quality. Based on an independent life cycle analysis, the primary energy demand to manufacture polyester polymer using the ReNEW process is lower than consumed when conventional virgin petrochemical feedstock is used.

Polygenta focuses on four products: high quality textile DTY, POY and chips and the sale of recycled ester to 3rd party polyester plants. In essence, ReNEW applies sophisticated chemical processes and controls – comparable to those used in high-end refining to generate high-purity feedstocks PTA and MEG – to an environmentally preferred feedstock (i.e. polyester PET bottles saved from landfills rather than crude oil, with its higher environmental impact).

The full range of quality recycled filament yarn is available in the range of 50-300 denier for a wide range of applications including Sports Apparel, Casual Fashion, Outdoor Wear, Polar

Polygenta is the only company in India to produce 100 percent recycled Polyester Filament Yarn (PFY) using post-consumer PET bottles



Environment friendly process

The process saves 0.7 barrels of oil and 0.20 cubic meters of landfills with recycling of every one ton of PET waste.

The process has zero discharge of liquid effluents.

The process saves energy than a conventional polyester manufacturing.

CO2 emissions are notably lower in comparison to peer companies.

Fleece, Backpacks and Soft Luggage, Home furnishings, and Automotive. Polygenta also supplies high performance textile grade chips and POY to supply chain partners for specialty products and applications.

At Polygenta, sustainability is at the heart of the business, where every day over one million PET bottle ends in the landfill without any definite solutions. Here is a company that uses its

patented 'ReNEW' chemical re-processing of these bottles and converts to highly sustainable PFY which is inherently superior to conventional mechanical reprocessing for these post-consumer PET bottles.

Nevertheless with this technology the company offers its supply chain partners and ultimately all the consumers a better choice for improving the environment and promoting a more sustainable planet.

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Article authored by Polygenta technical team

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