

Next Gen Solutions for Circular Business Model

Background

It is estimated that fashion industry generates nearly 92 million tons of waste annually, out of which less than 1% is recycled. Most of it goes to landfill / incineration, and a large amount leaks to the environment leading to land and water pollution.

There have been three key challenges to building circular business model in the fashion industry – availability of technology to recycle the fibres, lack of reverse logistics to segregate recyclable fibres and fabrics are not designed with view of circularity.

Growing consumer awareness concerning impact of clothing on environment, depletion of resources and climate change has led to the industry exploring and adapting more sustainable raw material options.

MMCF – a natural choice for circular business model

Responsibly produced MMCFs have emerged as one of the most sustainable fibre choices due to their sustainability credentials. MMCFs are made from natural and renewable wood sourced from sustainably managed forests and are made using closed loop process, which have much lower environmental impact compared to other fibres, MMCF are biodegradable in soil, water and marine environment and are easily compostable at the end of life.

With the advancement of technology, the waste cotton from pre- and post-consumer waste can now be recycled back into the viscose fibre which can replace use of virgin wood based pulp, thus providing a great potential of making a large shift from linear business model to circular business model.

The initiative

The challenge to recycling was that no technology was available to recycle pre- and post-consumer cotton waste into fresh fibres.

Investing in textile waste recycling technology has been a key part of Birla Cellulose's commitment to contributing to a circular economy. Its R&D efforts have led to several innovations that have shown promising results and are in various stages of development.

NextGen Solutions

NextGen Solutions are the designs, systems, and technologies that can help reduce pressure on forests as a source of raw materials and will enable us to protect world's forests.

These solutions offer a radical reduction in the use of materials that negatively impact the climate and biodiversity, and optimize the efficiency of material use (e.g. agricultural waste) and product reuse (e.g. used textiles).

Liva Reviva



Birla Cellulose's Liva Reviva fibre is made using Next Generation feedstock following the principles of circular textiles. It is made using 20% pre-consumer textile waste.

Liva Reviva is a pro-planet fibre with following features:

- similar properties as regular viscose fibres
- holds the distinction of RCS (Recycled Claim Standard)



- low water consumption and GHG emission intensity
- has unique molecular tracer inside the fibre for source verification at all stages and supply chain traceability through Blockchain

Birla Cellulose has been accelerating the adoption of alternative feedstock and next generation fibers as a very high priority thrust area and in recent years it has invested significantly in developing the technologies for recycling as well as building the capacities to scale up the production.

Nanollose

Nanollose based lyocell fibers – It uses an eco-friendly fermentation process to manufacture cellulose from an agro-industrial waste stream that is converted to lyocell fibers. This collaboration has resulted in a joint patent application after establishing lab scale production. We are progressing towards larger scale testing with this pulp for lyocell fibers currently.

Agri-waste Project

An agri-waste project will be launched that would use the unutilized agri-waste to make pulp. This under Fashion for Good, supported by Laudes Foundation and brand partners Adidas, Bestseller, Kering, Chanel, Levis, Zolando. The innovators that are being evaluated for this project and the objective is to evaluate the pulp made from agri-waste for making viscose or lyocell fibers.

Impact and Opportunities

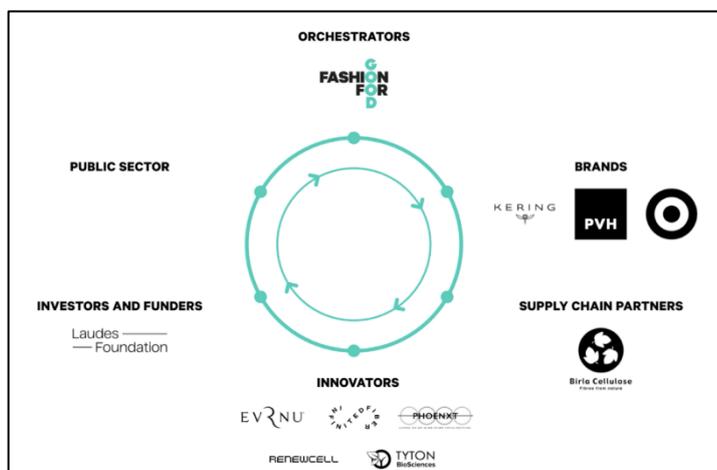
Birla Cellulose has successfully established Liva Reviva for textile applications. Birla Cellulose has established a complete traceability system based on GreenTrack™ platform which provides traceability of entire value chain based on blockchain based technology and a unique embedded molecular tracer.

It has also established ‘reverse logistics’ system for collecting suitable cotton waste for recycling and this has created a positive social impact for recycling industry which comes from weaker section of society, as the value of waste has increased by upcycling. Currently these efforts are being expanded.

Full Circle Textiles Project – Consortium Project

“Full Circle Textiles - Scaling Innovations in Cellulosic Recycling” aims to investigate economically viable and scalable solutions for cellulosic chemical recycling to enable a closed loop system converting textile waste - of cotton and cotton-blend materials, to produce new MMCF.

- First-of-its-kind consortium project
- Innovators working on technologies in chemical recycling of used clothing to make new fibres
- Over an 18-month period, project partners will collaborate with innovators
- Recycled content produced by these innovators is being converted at Birla Cellulose’s facilities to produce high quality MMCF
- Currently, PVH is using fibre made by Birla Cellulose to make garments





Sorting For Circularity India Project

Fashion for Good launched the Sorting For Circularity India Project, a consortium project to understand both the pre- and post-consumer textile waste streams in India, and to pilot sorting and mapping solutions. The project aims to build an infrastructure towards greater circularity in the years to come.

The project brings together industry players including Fashion for Good partners adidas, Levi Strauss & Co., PVH Corp., Arvind Limited, Birla Cellulose and Welspun India. A key technology partner for the project is Fashion for Good innovator Reverse Resources who provides the analysis of the pre-consumer textile waste streams in addition to designing and running the pre-consumer pilot. The project is supported through catalytic funding provided by Laudes Foundation.

Global Fashion Brands' Commitment

Few major fashion brands have made commitments* to source recycled / sustainable fibres

- Inditex – 100% sustainable cellulosic fibers by 2023
- H&M – 30% recycled materials by 2025 | 100% recycled or sustainably sourced materials by 2030
- M&S – Use of 25% reused/recycled material in at least 25% of the clothing by 2025

** based on publicly available information*

Way Forward

Birla Cellulose's current efforts are focussed on developing products made with both pre- and post-consumer waste with increased use of alternate feedstock. It plans to aggressively scale up the production of circular fibres to a level of **100,000 tons per year by 2024** and is committed to accelerate innovations that are aligned with UN SDGs 2030.