



Birla Cellulose
Fibres from nature



ADITYA BIRLA GROUP



VISCOSE[®]

VISCOSE - THE GREATER FIBRE

Sustainability Report 2019-20

index

Our second sustainability report details our experience with COVID-19 and how we responded to the pandemic. It mentions steps we took in contributing to the government and the community in the fight against COVID-19. It also details how we reassessed our business and took steps to ensure employees' health and wellbeing.

This report follows the structure of our first report where the first part showcases the intrinsic sustainability attributes of man-made cellulosic fibres. The second part talks about key material issues that need to be taken care of to ensure responsible manufacturing. The third, and the heart of the report, deep dives into our sustainability performance and discloses in detail how within our facilities and collaboratively with our supply chain, we are constantly raising the sustainability bar. The final part articulates how our sustainability strategy and actions are contributing, in our little way, towards the achievements of the UN Sustainable Development Goals, and also puts forth our future goals and targets.

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Globally, there are many natural and synthetic textile fibres available. These fibres have numerous applications depending on their properties and the end use.

Regenerated cellulosic fibres, i.e. Man-made Cellulosic Fibres (MMCF) such as viscose, modal and lyocell, lie between natural and synthetic fibres due to their raw material being a natural renewable source, whereas they are produced following a manufacturing process.

MMCF are made by chemically dissolving wood-based cellulose and then rebuilding it in the form of a fibre that can be used in textiles.

Growing consumer awareness concerning the impacts of clothing on the environment, subsequent textile waste after the useful life of clothing, depletion of resources and climate change has led to rising activism towards more sustainable use of textile materials.

Fibres used in textiles and clothing are basic constituents and are a key driver towards a sustainable

movement. Sustainable fibres are made with the application of sustainability principles right from sourcing to manufacturing, till their disposal.

MMCF have emerged as one of the most sustainable fibres in recent times mainly on account of their sustainability credentials and circularity potential. They are biodegradable and compostable at the end of their useful life.

Though MMCF are nearly 7% in the global fibre mix, the increased focus on these fibres is a result of their impeccable characteristics as compared to resource-intensive natural cellulosic fibres. The land required to grow wood for MMCF is less and the yield is exceptionally higher when compared to natural fibres.

Moreover, the forests protect biodiversity and sequester a high amount of carbon to mitigate climate change.

Here are some of the key sustainability and performance attributes that differentiate responsibly made MMCF.

SUPERIOR FROM AN
environmental perspective

SUPERIOR FROM A
product attribute perspective

SUPERIOR IN
versatility of applications

AFFORDABLE
fashion

SUPERIOR FROM AN *environmental perspective*



Made from Renewable Natural Source

Ethically sourced wood can only make Viscose a greater fibre. Sustainably managed forests not only continually regenerate the raw material from wood, but also act as great sinks for the absorption of GHG emissions.



Biodiversity Impacts

Wood harvested from forests can have negative impacts on the biodiversity and hence wood procured for viscose is from sources certified either by the Forest Stewardship Council® (FSC®), Programme for the Endorsement of Forest Certification (PEFC™) or Sustainable Forestry Initiative (SFI®).



Lower Water Consumption

Birla Cellulose is amongst the lowest consumers of water in the viscose process. We have applied the 4R principles to our process which lead to very low water consumption in manufacturing viscose. Also, viscose needs very less amount of water as compared to other natural fibres during its life cycle.



Land Use

MMCF use marginal land and have high yields, whereas natural fibres entail arable land which is required for food crops. There will be an increased competition for land with an increasing population and the subsequent food demand. Moreover, viscose uses a fraction of land compared to natural fibres such as cotton.



Land and Water Pollution Due to Chemicals & Fertilizers

The raw material for viscose - wood, does not require added fertilizers or pesticides. The fertilizers and chemicals necessary for other natural fibres have the potential to runoff and cause significant pollution to land and groundwater.



End of Life

Viscose is fully biodegradable and compostable, eliminating harm to human and environment health including marine life. Synthetic garments are non-biodegradable and recognised to cause marine pollution.



Single-Use Plastic Replacement

Single-use plastics are harmful to the environment and water bodies. MMCF, which are biodegradable and compostable in nature, can be used as a substitute in some of the applications.



Circularity

Newer technologies are utilising pre- and post-consumer waste as feedstock for producing viscose fibre. This offers the opportunity for circularity for the cellulose value chain.

SUPERIOR FROM A *product attribute perspective*



Outstanding Comfort & Style

Viscose is way ahead of other fibres when it comes to comfort and fashion. Breathability and moisture absorption of viscose is much higher than the other natural cellulosic fibres.

The fibre is lightweight, inspires soft drapes and effortless style. Viscose fibres are easy to style due to their colour range, brilliant lustre and good drape.



Distinguished Qualities

Viscose derives good qualities of both man-made and natural fibres. Like synthetic fibres, viscose has lustre and can be styled easily. At the same time, it is based on a natural, renewable raw material.



Easily Blends In

Viscose is one of the most easily 'blendable' fibre options. It blends easily with natural as well as synthetic fibres enhancing their characteristics. It lends a luxurious feel to other fibres.

SUPERIOR IN *versatility of applications*

- Viscose is a versatile fibre. It can run on conventional as well as modern spinning technologies like Ring Spinning, Open End and Air Jet. It also has a variety of applications in the Nonwoven sector.
- MMCF are a preferred choice for nonwoven wipes due to its high absorbency and eco-friendly properties such as biodegradability in soil, water or marine environments.



AFFORDABLE *fashion*

Besides being affordable, viscose fibres offer many sustainability advantages over natural and synthetic fibres and have high quality performance characteristics that are necessary in high-end fashion.



Birla Cellulose
Fibres from nature

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- Collaboration with multi-stakeholders

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performance highlights

Responsible Sourcing

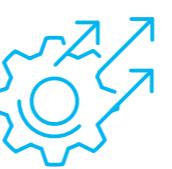


Globally, rank #1 in Canopy's Hot Button Report 2020 with 'dark green shirt' rating

Conservation work in Boreal Forests in collaboration with Canopy

Implementation of Supplier Assessment & Evaluation thereby addressing SDG 8

Responsible Manufacturing



Grasilene Division, Harihar, has been bestowed with the CII-ITC Sustainability Award 2019 for Excellence in Environment Management

3rd party verified Higg (3.0)
FEM 2019 score of 92% at
7 fibre manufacturing sites

EU BAT compliance achieved at China and Thailand fibre manufacturing sites

Reduction in sulphur-to-air emission by 21% over FY15 baseline

Achieved water reduction of 34% at all fibre sites while 54% reduction at all water stressed sites over the baseline of FY15

\$170 million capex under implementation for EU BAT (closed-loop) technology

Sustainable Products



Launched **reviva** upcycling cotton fabric waste and innovations in NextGen Solutions

90 patent applications/patents in 16 countries belonging to 52 patent families

Valuable Partnerships



Blockchain based solution - GreenTrack™ - now maps 100% of forest sources

Actively engaging with

- Canopy
- Changing Markets Foundation
- Sustainable Apparel Coalition
- ZDHC
- Textile Exchange

Full Circle Textiles - joint project with



Leading Brands & Innovators

BIRLA CELLULOSE HAS WON THE GOLDEN PEACOCK GLOBAL AWARD FOR SUSTAINABILITY 2020

GRASIM INDUSTRIES RANKED 9TH AMONG INDIA'S TOP 100 COMPANIES FOR SUSTAINABILITY & CSR IN 7TH RESPONSIBLE BUSINESS RANKINGS 2020 BY ET & FUTURESCAPE

Social Responsibility



Total CSR spend is greater than \$85 million including COVID-19 measures

85% reduction in LTIFR over FY15

Nagda site wins Golden Peacock Award for Corporate Social Responsibility (CSR)



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Chairman's Message

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The turn of the year has brought new hope and optimism. The speedy deployment of vaccines, rapid economic recovery and embrace of digitisation in all walks of life, are just some of the reasons for a marked change in sentiment.

However, events of 2020 are fresh; and the year itself will only gain in significance when viewed through the perspective lens of time. The experience of the past year, reinforces the criticality and importance of the role played by sustainable corporations in societies at large. Perhaps uniquely, the crisis also brought to fore the regenerative and stabilising power of large corporations. Especially the ones with the ability and intent to enable smaller stakeholders in the ecosystem to maintain an even keel during periods of turbulence. This recognition of the symbiotic nature of various components of a functioning economy is at the core of building a sustainable business.

The pandemic sharpened the focus on business sustainability and presented an opportunity for

Businesses across the Aditya Birla Group rose to this challenge by leveraging the power of technology and innovation.

Birla Cellulose, too, achieved some significant milestones in its sustainability journey. The fibre unit in Thailand attained compliance with the stringent EU BAT norms. This is in line with our endeavor to make all units compliant with EU BAT standards by 2022. The company has earmarked \$170 million as a capital outlay to upgrade to cutting-edge technology compatible with EU BAT standards.

Having already set the global benchmark for lowest water consumption, the Nagda unit is now all set to achieve the landmark of Zero Liquid Discharge by 2021. This is a first for the viscose fibre industry globally.

The company has also made rapid progress in introducing green products in the market. The eco-enhanced Livaeco by Birla Cellulose™, and the circular product Liva Reviva, which is made using industrial cotton waste, have captured the imagination of markets and consumers in a short span of time.

Birla Cellulose also broke new ground by giving visibility of the entire MMCF value chain - from Forest to Fashion - using a block-chain based platform GreenTrack™. This unique proposition provides complete transparency and traceability to the buyer for informed purchase decisions.

Birla Cellulose's sustained efforts on sustainability was also recognised globally. The company maintained its global lead at the No.1 position in the Canopy Hot Button Report 2020, a testimony of its efforts in sustainable forest management and development of next generation solutions.

I am proud to see Birla Cellulose taking the global lead in sustainable business practices, which is fully aligned to the vision of the Aditya Birla Group as well. And I want to compliment the team for their dedicated efforts in sustaining the level of excellence in their business and wish them the very best for the years ahead.

Kumar Mangalam Birla
Chairman, Aditya Birla Group

businesses to accelerate their efforts on sustainability



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From the Desk of Business Director

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SUSTAINABLE PRODUCTS

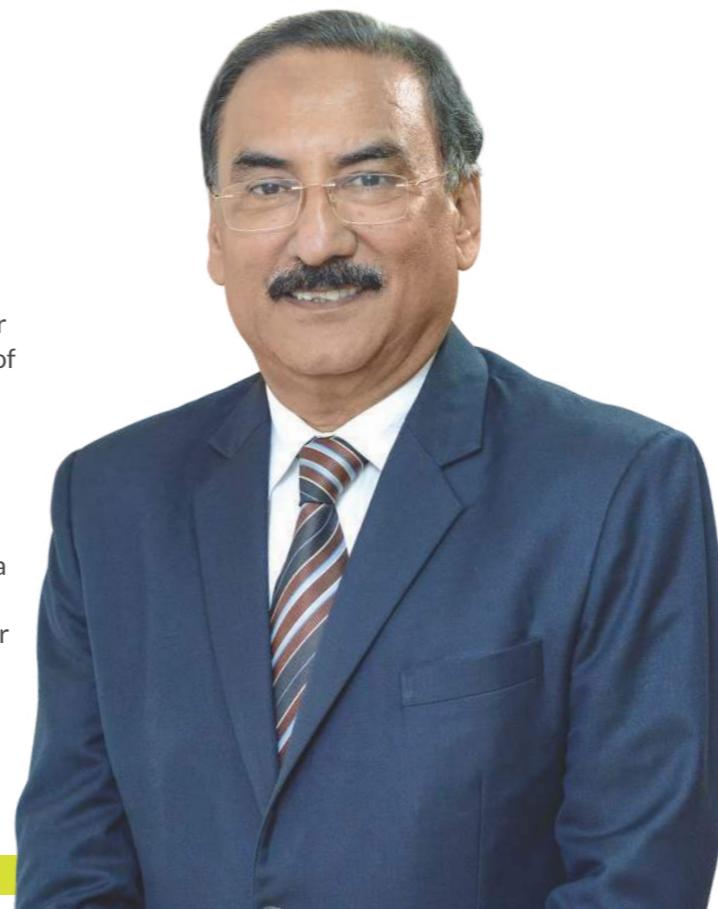
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Dear Valuable Partners,

The way COVID-19 would disrupt our lives could never have been foreseen, it has resulted in widespread loss of lives and livelihood that has emphatically shaken up people, nations as well as the global economy.

Catastrophes of this scale call for collective humanitarian actions at an unprecedented level. Recognising this, we at the Aditya Birla Group and Birla Cellulose devoted our full attention to extending complete support towards mitigation efforts across our geographical presence for our employees and the community at large.

**We take pride in the way
that our teams demonstrated**

all-encompassing assistance needed by surrounding communities, employees, underprivileged sections of society and other stakeholders.

This included distribution and provisions for healthcare kits, PPEs, medicines, food packets, drinking water, grocery kits and more. Also, a large number of extra bed capacity was created with isolation wards and treatment facilities for COVID patients.

The sites also worked seamlessly to create comprehensive protocols for protection of employees, suppliers, customers and SOPs to resume operations in a safe manner.

Resilience, the cornerstone of Birla Cellulose business strategy, came out in full play at the time of this crisis and helped us sail through these challenging times.

Global economies were badly impacted by the lockdowns and restrictions due to COVID-19, and fashion industry was no different. Life under the 'new normal' and the pandemic has taught us to be resilient and agile, and we apply these principles to business as well.

The importance of sustainable business practices has never been more compelling than now and have never been so intertwined with the success of business and its survival in the long term. 'Less is more' has become the mantra for businesses today.

In addition to this, changes in consumer behavior and expectations are driving the fashion industry to develop more sustainable and transparent supply chains and this has dominated much of the discussion during the eventful year of 2020.

Birla Cellulose has intensified efforts to build a more robust and sustainable textile value chain. **We have made considerable progress on all the five pillars of our strategy and have extended our leadership by continually improving upon our own benchmarks.** The focussed efforts on those pillars have yielded very positive results. I am delighted to share that:

- Birla Cellulose is ranked #1 with 'Dark Green Shirt' in Canopy's Hot Button Report 2020.
- 1st in the MMCF industry to achieve carbon neutrality in Scope 1 and 2 emissions by sequestration of carbon due to net positive growth of directly managed forests.
- 3rd party verified Higg (3.0) FEM scores, setting new industry benchmark with an average 92% across fibre sites.
- Despite COVID-19, we made steady progress on the 'Roadmap to Responsible Viscose Manufacturing' with an investment of \$170 million to achieve EU BAT Compliance.
- Our sites in China and Thailand, now fully comply with the stringent EU BAT and ZDHC standards.
- Our site in Nagda will be the 1st to achieve Zero Liquid Discharge (ZLD) in viscose industry globally, the commissioning is expected in 2021.
- 1st in MMCF industry with complete visibility of supply chain from forest to fashion is now available to consumers through our blockchain based GreenTrack™ platform.

- The newly launched circular product Liva Reviva - based on Birla Cellulose's proprietary technology - has caught the imagination of sustainability focussed brands and is growing rapidly.
- We joined Fashion For Good (FFG) with an objective of intensifying the collaborative effort towards circular fashion and promoting innovation.
- Livaeco by Birla Cellulose™, eco-enhanced viscose fibre volumes grew more than 5 times in the current year.
- Grasim Industries was ranked 9th for its Sustainability and CSR practices in India by Economic Times and Futurescape 7th Responsible Business Rankings 2020.

Our engagement with multi-stakeholder organisations such as Changing Markets Foundation, Canopy, ZDHC, SAC, Fashion for Good, Textile Exchange and WBCSD, has been a great learning experience that contributed significantly in improving our environmental performance.

In continuation to our journey presented last year, I am pleased to share our second sustainability report which elaborates our efforts in building a sustainable business for a better tomorrow.

I feel extremely grateful for the support and motivation provided by our valuable partners. We are committed to continuing our sustainability drive with greater zest to make a positive impact on people and the planet.

I thank and compliment one and all for having contributed their best in this highly satisfying sustainability journey and seek their continued support going forward.

Dilip Gaur
Business Director, Pulp & Fibre Business



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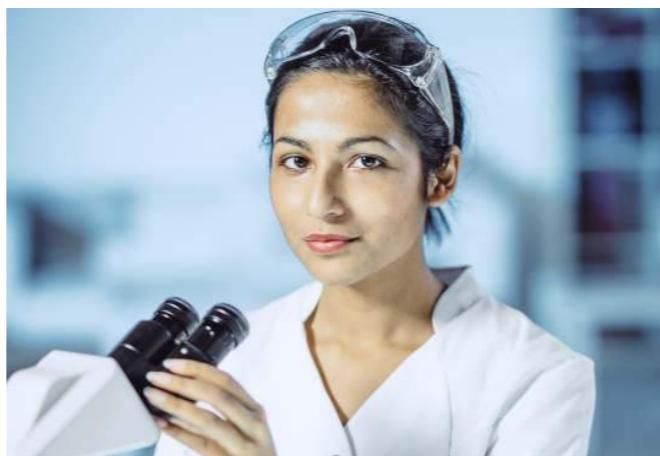
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VALUABLE PARTNERSHIPS

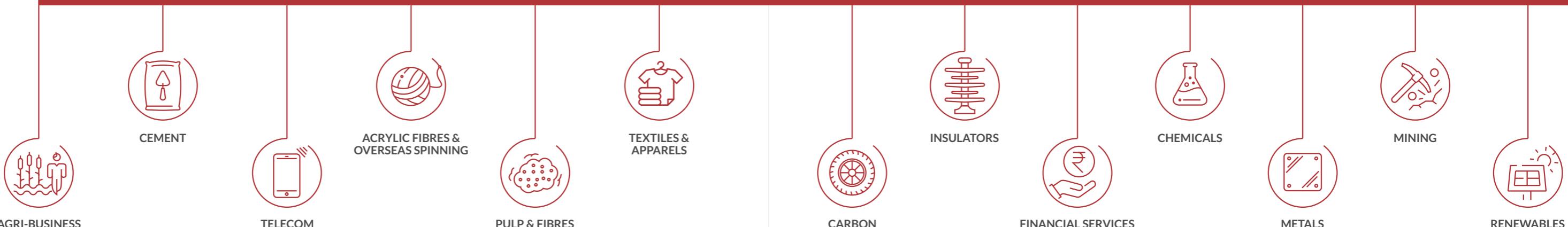
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DIVERSIFIED OPERATIONS WITH A BALANCED PRESENCE ACROSS MANUFACTURING AND SERVICES



Globally, Aditya Birla Group is among
THE TOP THREE PLAYERS IN



ADITYA BIRLA GROUP

In India, Aditya Birla Group is among
THE TOP THREE PLAYERS IN



ALUMINUM
ROLLING



VISCOSE
STAPLE FIBRE



CARBON
BLACK



FASHION
(branded apparel)
& LIFESTYLE



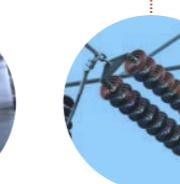
MOBILE
TELEPHONE
INDUSTRY



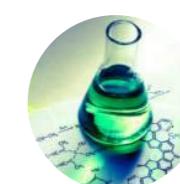
VISCOSE
FILAMENT
YARN



CEMENT
(excluding China)



INSULATORS



CHLOR-ALKALI
SECTOR



NON-BANKING
FINANCIAL SERVICES
IN LIFE INSURANCE



ASSET
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Birla Cellulose, part of 'Aditya Birla Group', is India's first truly multinational corporation. Fibre manufacturing that commenced its operations in 1954, is one of the oldest businesses of Aditya Birla Group. Present at 6 locations across the globe today, Birla Cellulose produces dissolving grade pulp in India, Canada and Sweden, and a complete range of man-made cellulosic fibres (MMCF) spanning all the three generations of fibres in India, Indonesia, Thailand and China. Sodium Sulphate, co-product from viscose manufacturing, is used in various industries such as detergents, glass etc. From the very onset, global standards were marked both in terms of commitment to quality and setting up of world-class facilities and processes.

Birla Cellulose is the umbrella brand for Aditya Birla Group's MMCF fibre offerings. Viscose is a biodegradable fibre with characteristics akin to cotton.

Wood, the most important raw material for viscose production, is sourced from controlled forests, following international forestry standards like FSC® (Forest Stewardship Council®), SFI® (Sustainable Forestry Initiative) and PEFC™ (Programme for the Endorsement of Forest Certification).



To be the global leader in the Man-made Cellulosic Fibres industry



Birla Cellulose collaborates actively with upstream and downstream partners to enhance the sustainability performance of the value chain. We also collaborate actively with global benchmark organisations on sustainability such as Sustainable Apparel Coalition (SAC) | Canopy | Zero Discharge of Hazardous Chemicals (ZDHC) | Changing Markets Foundation | Textile Exchange | World Business Council for Sustainable Development (WBCSD) | Fashion for Good and other global institutions, and apply their best practices in our value chain.

OUR VALUES

Our core values define what we stand for and how we do things. They are akin to a compass that guides our decision making and behaviour. Individually, each value means what it is and when combined together, they shape the culture of our organisation and its identity.



INTEGRITY

Acting and taking decisions in a manner that is fair and honest. Following the highest standards of professionalism and being recognised for doing so. Integrity for us means not only financial and intellectual integrity, but encompasses all other forms as are generally understood.

COMMITMENT

On the foundation of integrity, doing all that is needed to deliver value to all stakeholders. In the process, being accountable for our own actions and decisions, those of our team and those on the part of the organisation for which we are responsible.

PASSION

An energetic, intuitive zeal that arises from emotional engagement with the organisation that makes work joyful and inspires each one to give his or her best. A voluntary, spontaneous and relentless pursuit of goals and objectives with the highest level of energy and enthusiasm.

SEAMLESSNESS

Thinking and working together across functional groups, hierarchies, businesses and geographies. Leveraging diverse competencies and perspectives to garner the benefits of synergy while promoting organisational unity through sharing and collaborative efforts.

SPEED

Responding to internal and external customers with a sense of urgency. Continuously striving to finish before deadlines and choosing the best rhythm to optimise organisational efficiencies.



We aim to create superior and sustainable value for all our stakeholders, maintaining the majority of market share in the man-made cellulosic fibre industry globally, through:
Innovation in product and process
Excellence in quality, service and people development
Focus on sustainability across the value chain



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Global Footprint

Birla Cellulose touches lives of people across the world, from plantation to fashion and lifestyle. An idea seeded in 1947 has grown organically and made us a global leader in VSF. Headquartered in Mumbai, our plantations, factories and marketing offices reach out to several countries, making a positive impact on the global textile and non-woven businesses.



OPERATIONS & MARKETING OFFICES



VISCOSE STAPLE FIBRE UNITS

- India**: Nagda, Harihar, Kharach & Vilayat
- Thailand** - Angthong
- Indonesia** - Purwakarta
- China** - Xianyang



PULP UNITS

- India**: Harihar
- Canada**: Atholville, Nackawic & Terrace Bay
- Sweden**: Örnsköldsvik



CORPORATE AND MARKETING OFFICES

- India, Bangladesh, China, Thailand, Indonesia, Turkey and USA**
- LAPF DESIGN STUDIOS**
- India (3), Indonesia (1) and USA (1)**



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Innovation Centres at Birla Cellulose

Sustainability and innovation work in tandem at Birla Cellulose. Our in-house research and development centres are the hubs which contribute to bringing versatility in our products and their applications through technology.

Keeping the customer at the centre, we have created an environment and a culture for innovation to flourish. Our process innovation centres are working to improve the processes and make them more sustainable. Closed-loop or low carbon technology, sustainable and alternate raw materials, eliminating hazardous chemicals and at the same time creating newest quality benchmarks, are focus areas. Our products are the result of carefully listening to our customers, taking their feedback seriously, and delivering sustainable solutions as per their needs. The sustainably produced fibres are designed to give unparalleled comfort and natural feel to the consumer.

ADITYA BIRLA SCIENCE & TECHNOLOGY COMPANY PRIVATE LIMITED (ABSTCPL)

ABSTCPL is the corporate research and development centre for the Aditya Birla Group and supports the broad diversity of the Group's businesses through multi-disciplinary teams of expert scientists and engineers, who lead fundamental and applied research projects. The centre aims to deliver innovative solutions, continuously improve core competencies and execute it effectively. The centre is supported by state-of-the-art equipment set in a technology-led environment.



CLONAL PRODUCTION CENTRE, HARIHAR, INDIA

A state-of-the-art Clonal Production Centre at our Harihar mill premises produces and distributes high yielding, fast growing, site specific and disease resistant clones of eucalyptus to farmers in Karnataka, India. In line with the agro-forestry models, we motivate the farming community to plant the pulp wood species on the bunds too.



TEXTILE RESEARCH AND APPLICATION DEVELOPMENT CENTRE (TRADC), KHARACH, INDIA

The TRADC was established in 2004 as the key technology-market interface and enables the business to be a leader in cellulosic fibres by creating product-offering innovations and effectively commercialising them across the value chain.



FIBRE RESEARCH CENTRE (FRC), KHARACH, INDIA

The FRC strengthens the R&D work on the fibre manufacturing process by facilitating innovation, quality upgradation, efficiency improvement, recipe formulation and technology transfer to the commercial plant for all the viscose staple fibre (VSF) units of Birla Cellulose.

NEXT GENERATION FIBRE RESEARCH CENTRE (NGFRC), NAGDA, INDIA

The NGFRC focusses on development of environment-friendly solvent spinning technology for making lyocell fibre (Birla Excel). It houses a pilot plant facility focussing on development of sustainable and energy efficient processes, new product development and technology transfer to the commercial plant.

PULP AND FIBRE INNOVATION CENTRE (PFIC), TALOJA, INDIA

The latest and most advanced R&D centre, PFIC focusses on technology projects in areas of product development and enhancement, sustainable processes, quality improvement, along with reduction in energy footprint.

DOMINNOVA, DOMSJÖ, SWEDEN

DomInnova serves as Domsjö Fabriker's innovation engine with the task of encouraging, capturing and processing ideas from our own company and from national and international research organisations. DomInnova has a wide external network with companies, which gives us access to advanced laboratories, pilot equipment, analytical instruments, etc. DomInnova also cooperates with other research teams within the Aditya Birla Group.



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Value Chain & Us

Viscose fibre is a basic raw material for the textile value chain. Our value chain helps us weave this fibre into fashion to give unparalleled comfort to the end consumer. Hence, the onus is on us to not only be the most sustainable raw material provider to the textile value chain, but also collaborate to drive sustainability improvements across the value chain. Birla Cellulose actively collaborates with all stakeholders throughout the entire viscose value chain - from plantation of forests to manufacturing of pulp, and from fibre to fashion, and all the way up to the end consumers.

At every stage, Birla Cellulose is deeply engaged with the value chain partners by working together to improve the sustainability of our products in order to create a positive social impact and value for all our stakeholders.

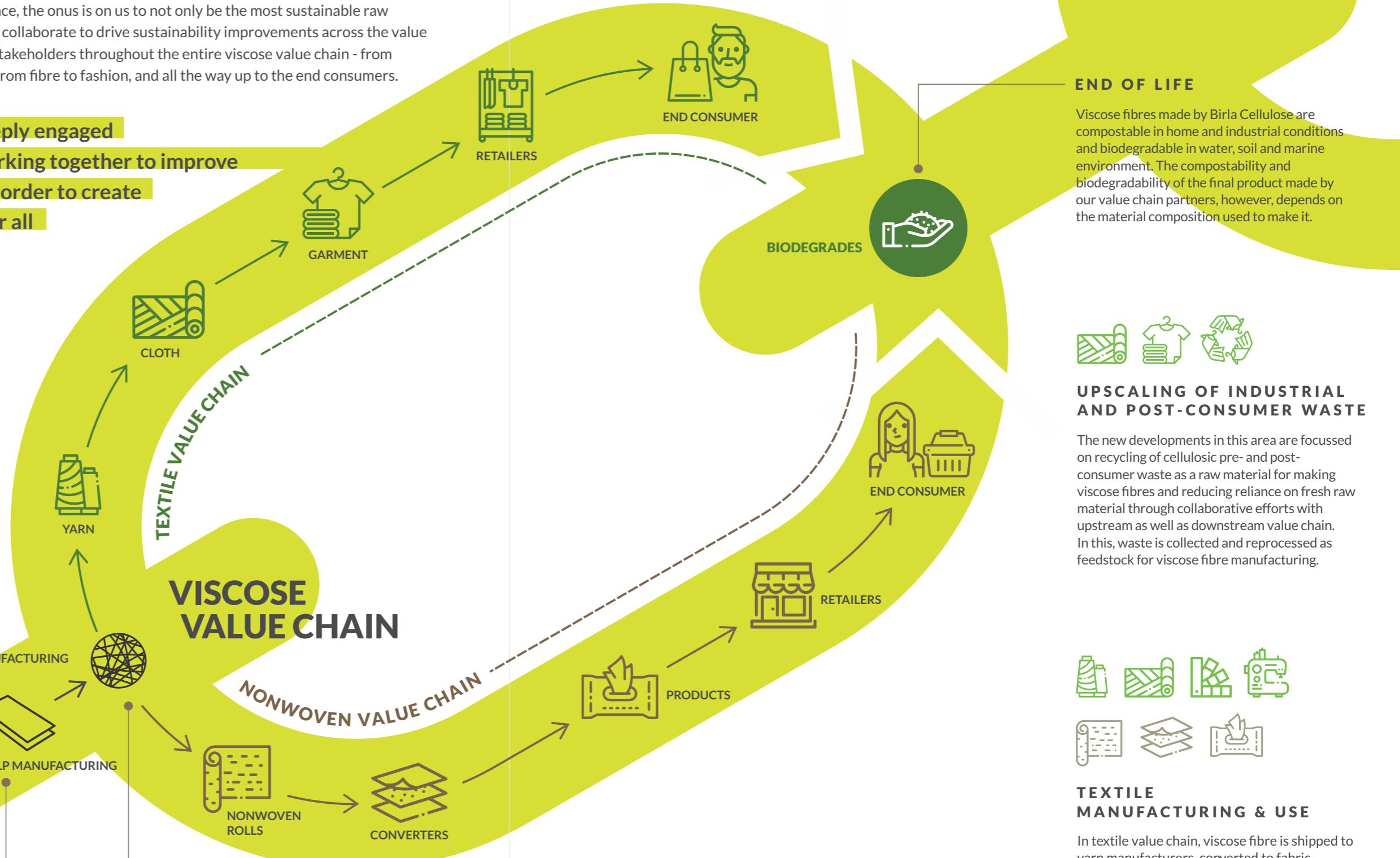
RAW MATERIAL SOURCING

Wood and chemicals are the most important raw material for MMCF production. Birla Cellulose has implemented a strict 'Wood Sourcing Policy' and sources wood from sustainably managed forests following internationally renowned standards like FSC®, SFI®, PEFC™. All the suppliers adhere to 'Supplier Code of Conduct' and 'Supply Chain & Procurement Policy'.

FOREST PLANTATION

Dissolving wood pulp is produced at our manufacturing plants as well as procured from external sources for making fibre. We have our own wood pulp sites in India, Canada and Sweden and we ensure that wood procured is from sustainable sources.

PULP MANUFACTURING



FIBRE PRODUCTION

The dissolving wood pulp sheets shipped to our fibre manufacturing plants in various geographies are converted to most common cellulosic fibres such as Viscose, Modal and Lyocell. During viscose/modal production, co-product, sodium sulphate is generated and used in downstream industries such as glass, detergents, etc.

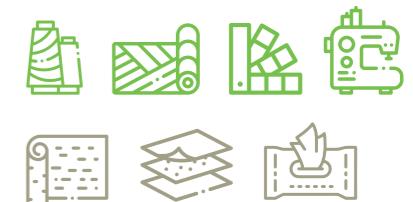
END OF LIFE

Viscose fibres made by Birla Cellulose are compostable in home and industrial conditions and biodegradable in water, soil and marine environment. The compostability and biodegradability of the final product made by our value chain partners, however, depends on the material composition used to make it.



UPSCALING OF INDUSTRIAL AND POST-CONSUMER WASTE

The new developments in this area are focussed on recycling of cellulosic pre- and post-consumer waste as a raw material for making viscose fibres and reducing reliance on fresh raw material through collaborative efforts with upstream as well as downstream value chain. In this, waste is collected and reprocessed as feedstock for viscose fibre manufacturing.



TEXTILE MANUFACTURING & USE

In textile value chain, viscose fibre is shipped to yarn manufacturers, converted to fabric, processed, and finished in subsequent stages, and used for garment manufacturing. Use phase starts once the garment reaches the hands of the customers.

The nonwoven value chain is a shorter one, where the converters are our customers involved in roll-goods production and final products like wipes.



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Sustainability & Us

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Reporting Principles

The Sustainability report seeks to communicate our environmental, social and economic performance to our stakeholders. The report highlights our management approach to sustainability, which is deeply integrated in our business strategy. It is our continuous endeavour to minimise environmental impact using our sustainability framework, which not only looks at the sustainability aspects of viscose manufacturing, but is also equally focussed on working closely with our value chain partners to improve the sustainability of entire man-made cellulosic value chain. These aspects are scoped and incorporated in the five pillars of our sustainability strategy - **Responsible Sourcing, Responsible Manufacturing, Sustainable Products, Valuable Partnerships and Social Responsibility.**

In this report, we have adopted the Global Reporting Initiative (GRI) Standards in accordance with the Core Option. The GRI content index table at the end of this report, shows the definition of each reported disclosure element as well as its location within the report. The performance disclosures contained in this report pertain to the period between April 01, 2019 and March 31, 2020. We are determined to publish our sustainability report on a regular basis.

For your valuable feedback and suggestions, please write to

Mr. Mukul Agrawal on mukul.k.agrawal@adityabirla.com

Boundary and Scope

This report's boundary and scope include the corporate and marketing offices across locations, four Dissolving Grade Pulp and seven Viscose Staple Fibre manufacturing units. The report also covers an array of topics, which have been defined as material to our business and operations. While our employment data covers our offices, the scope of this report excludes other environmental and social data relating to our corporate and marketing offices.



ENTITIES WITH FIBRE MANUFACTURING UNITS

Grasim Industries Ltd. - VSF operations (India)	Staple Fibre Division, Nagda (M.P.)
Thai Rayon Public Company Ltd. (Thailand)*	Grasilene Divison, Harihar (Karnataka)
PT Indo Bharat Rayon (Indonesia)*	Birla Cellulosic, Kharach (Gujarat)
Birla Jingwei Fibres Co. Limited (China)*	Grasim Cellulosic Divison, Vilayat (Gujarat)



ENTITIES WITH PULP MANUFACTURING UNITS

Grasim Industries Ltd. – Harihar Polyfibers (India)	Atholville Mill
AV Group NB (Canada)*	Nackawic Mill

*Shareholding with Grasim Industries Ltd. #JV with Grasim Industries Ltd.



Sustainability is a way of life at Birla Cellulose. It is at the core of the business strategy and deeply inculcated in the culture of the organisation.

We have a long-term commitment to sustainability and follow a 360° approach, where we work towards making the entire process - right from plantation to pulp to fibre production, fashion and end of life, upstream and downstream value chain - more sustainable. We collaborate and partner with all the stakeholders to have a broader and deeper positive impact.

Every process at Birla Cellulose is designed to enhance the sustainability attributes of the product in a manner that brings out the richness of the natural cellulose sourced from sustainable forests. It is transformed efficiently into fibre and then to fashion that gives unparalleled comfort and natural feel to the consumers. We are committed to the mission of problem solving for our stakeholders through new technological innovations that maximise the sustainability impact, while creating value for all the stakeholders and wellbeing of people and the planet.

Independent Assurance

This report is externally assured by Ernst & Young Associates LLP, excluding economic performance indicators, which are drawn from our annual reports. The assurance is in accordance with the limited assurance criteria of the International Standards on Assurance Engagement's (ISAE) 3000. The assurance approach, methodology, and observations are presented in the assurance letter attached at the end of the report.

Management's Approach to Sustainability



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Materiality

In order to create a transparent and robust approach in sync with the needs of the industry and help us shape our sustainability strategy, a complete materiality assessment was done in the year 2019 and the key materiality issues were identified. The UN SDGs, materiality issues identified with stakeholders, risk assessments and the ABG Sustainability Framework constitute the framework of Birla Cellulose's Business Sustainability Strategy. We take feedback on a continuous basis from both internal and external stakeholders, and the materiality issues are updated accordingly.

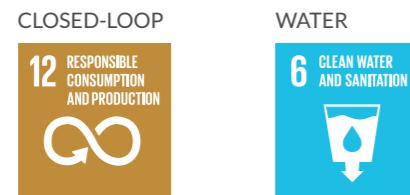
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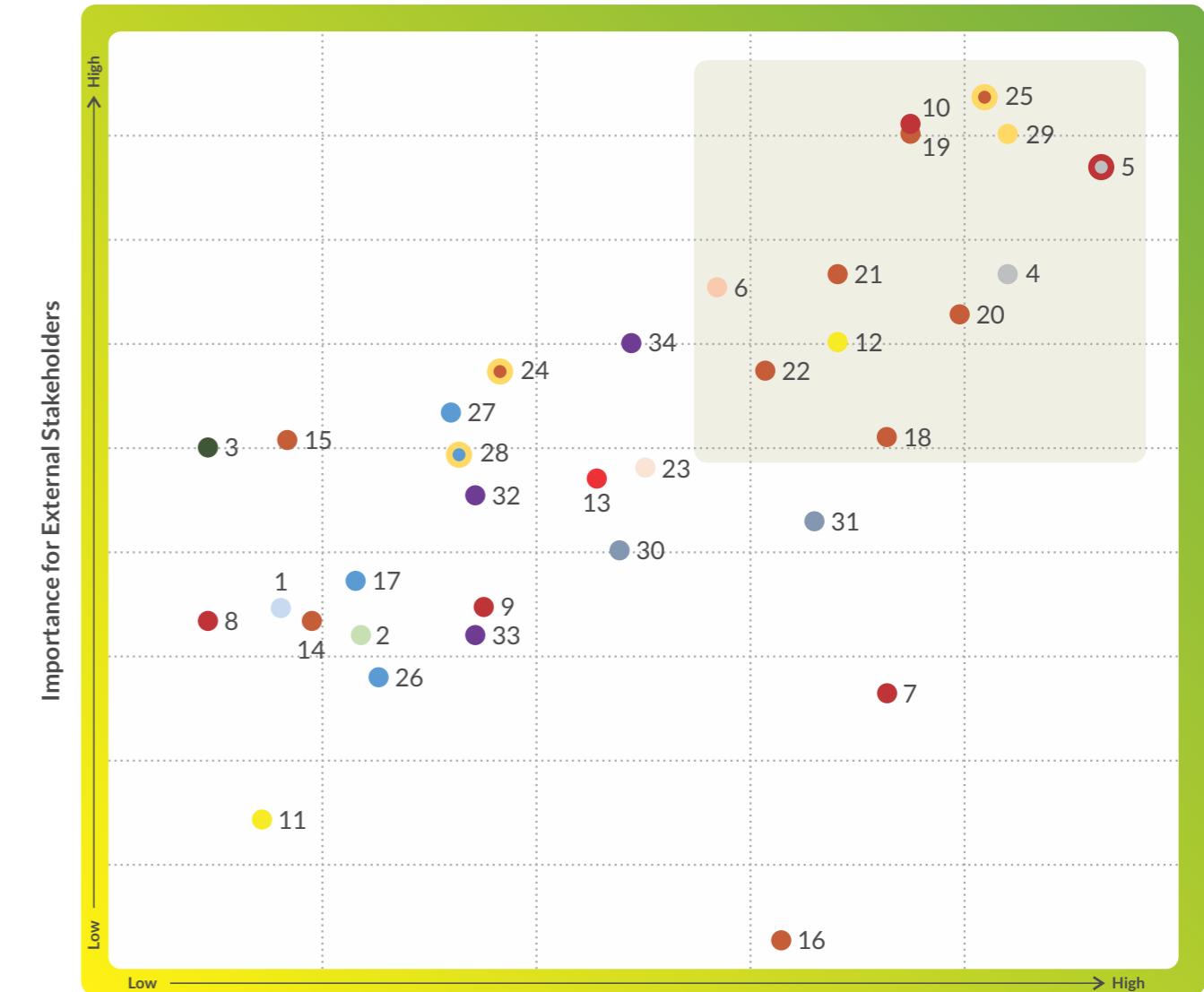
SUSTAINABLE PRODUCTS & CIRCULAR ECONOMY



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Materiality Matrix



Importance for Internal Stakeholders

Most important material issues

No.	Issue
4	Water Footprint
5	Occupational Health & Safety
6	GHG Reduction in Manufacturing
10	Fair Labour Practices in Supply Chain
12	R&D for Technology Upgradation
18	Customer Satisfaction
19	Sustainable Procurement
20	Waste Management
21	Best Available Techniques (BAT) for Production
22	Closed-loop Manufacturing
25	Chemical Management
29	Responsible Wood Sourcing

Other key material issues

No.	Issue
1	Welfare of Local Communities
2	Capacity Building in Value Chain
3	Gender Equality
7	Talent Development
8	Collaborating for Human Rights
9	Economic Performance
11	Collaborating for Enhancing Local Supplies
13	Equal Opportunity Employer
14	Global Certifications for Products & Process
15	Circular & Recycled Products
16	Partnership for Sustainable Viscose Promotion
17	Responsible Supply Chain Management
23	GHG Reduction in Supply Chain
24	Biodiversity & Resources Management
26	Sustainable Product Development
27	Marine Pollution from microfibres
28	Sustainable Product
30	Transparency in Sustainability Disclosures
31	Transparency in Governance System
32	Collaboration for Value Chain Sustainability
33	Partnership with Multi-stakeholder Organisations
34	Transparency & Traceability



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Risk Management

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Sustainable business requires that the risks are managed proactively and promptly before they can start to damage the performance of the company. Risk Management is an integral part of business management and is the practice of systematically identifying, understanding and assessing risks, and the controls to manage them.

Risk management at Birla Cellulose has three main steps.



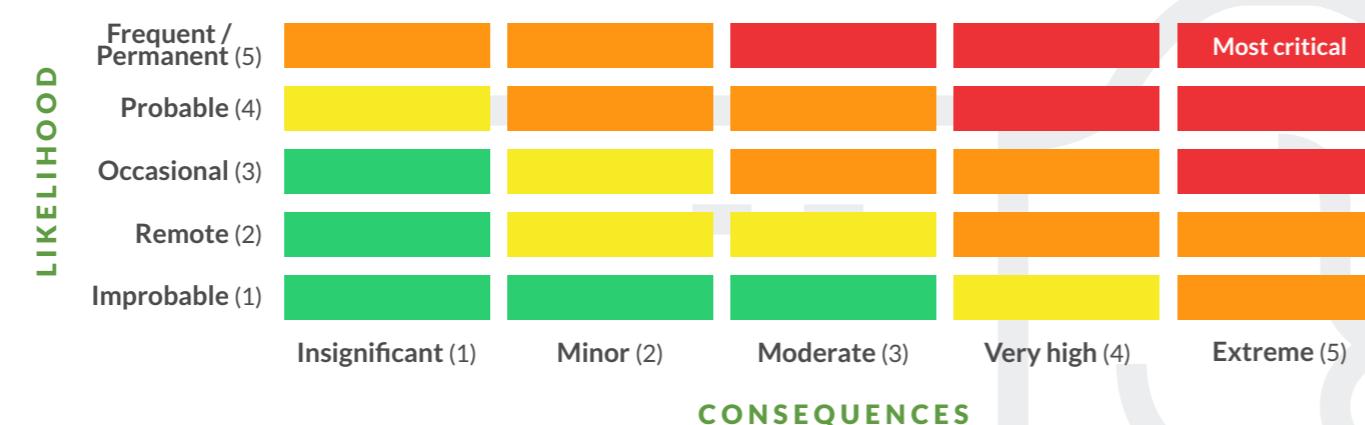
Birla Cellulose determines priorities concerning risks and opportunities based on the assessment and combined analysis of likelihood and impact.

LIKELIHOOD HAS 5 LEVELS:

- **IMPROBABLE** (almost impossible to occur in the next 10 years)
- **REMOTE** (may occur once or twice in the next 10 years)
- **OCCASIONAL** (may occur more than twice in the next 10 years)
- **PROBABLE** (likely to occur at least once every year in the next 10 years OR continues once every year after one occurrence)
- **FREQUENT / PERMANENT** (more than once a year over the next 10 years OR permanently continues or occurs more than once every year after one occurrence)

On a Heat Map, assessed risks and opportunities are mapped, which determines different levels of priorities for a company to mitigate risks and enhance opportunities, including climate change.

All the risks are coded, categorised and then reported. Risks are assigned to owners and a mitigation plan is prepared for each identified risk with high occurrence probability. Based on the heat map, inherent risk is calculated, and a mitigation plan is prepared, post which residual risk is calculated.



Sustainability Cell reviews the risks every quarter and reassesses the risks based on actions taken against a particular risk; in the event of any changes, the risk is re-evaluated, and updates are made to risk register or risk matrix.



WOOD & OTHER RAW MATERIAL SOURCING RISKS

Wood is the most important raw material for Birla Cellulose and there is a limited supply of sustainably sourced wood. Forests, especially the ancient and endangered forests, house majority of the biodiversity and sequester carbon to fight global warming. Loss of forests, therefore, can be a serious risk to biodiversity and lead to global warming. Raw material risk needs to be addressed effectively.

Birla Cellulose's Wood Sourcing Policy has been implemented to address this risk and to ensure that the wood is sourced from sustainably managed forests, protecting and conserving the ancient and endangered forests. We have also prioritised the development of alternate raw materials, such as pre- and post-consumer waste and agri-waste to reduce our reliance on virgin wood.



WATER AVAILABILITY

Freshwater is a unique resource which is essential for businesses to operate and nature to thrive. Millions of people are at risk globally from water scarcity and pollution, and a considerable amount is being lost by investors, companies and municipalities due to lack of this resource. The need to protect and restore freshwater ecosystems and to seize the potential of sustainable and efficient management of water has never been greater.

Birla Cellulose understands that water is a key resource and over the years, has adopted the '4R' (Reduce, Recycle, Reuse & Regenerate) principle for protecting and conserving water resources through excellent water management practices. It is an integral part of our commitment towards water stewardship.



MARKET RISKS

Consumers are a driving force for the global fashion industry. Awareness towards pollution by the fashion industry, circularity and climate change and its ill effects are taking a major share of consumers' heads space, making consumers' changing preference a risk. Today, fashion products are expected to meet the basic performance criteria of sustainable production, ethical transactions and respect for human rights and the suppliers who lack these requirements will not sustain in the market.

Birla Cellulose strategy is to lead in sustainable practices and convert this risk to opportunity. Birla Cellulose's business strategy incorporates the sustainability best practices applied in the operations and across the supply chain to cover the customers' expectations. Birla Spunshades, Birla Excel, Livaeco™ and Liva Reviva are some of the examples. Life Cycle Assessment (LCA) methodology is used to understand and improve the products.





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CLIMATE CHANGE RISKS

Climate change is leading to several natural calamities and weather events that may affect our operations, especially in water-stressed countries. For instance, shifting rainfall patterns can affect the availability of water. Uncontrolled rains can result in flooding which in turn can lead to crop failure. Forest fires can lead to deforestation and reduce access to wood. Regulators can bring in carbon tax making coal expensive.

Some of the key climate related risks are mentioned below:

Current and emerging regulation, legal and policy related risks

Climate change related regulations are continually evolving. The governments promoting renewable energy, discouraging use of thermal energy, putting limits on water usage can pose a risk to the businesses. GHG emissions reduction is also being mandated by regulators with direct or indirect taxes on thermal energy.

Birla Cellulose has a proactive approach in engaging with regulators to understand upcoming regulations and plan for it proactively.

Our GHG, energy and water stewardship programmes are periodically reviewed to align with the changing local, national and global regulatory framework and disclosure requirements. New regulations and conformance to existing ones are tracked through our digitally enabled tool ENHESA.

Technology

New technologies for renewable energy, energy efficient equipment, circular business models are continually being developed. Not adapting to these can lead to technological obsolescence.

Birla Cellulose invests strongly on technological development in our operations including those required for low carbon economy.

Chronic physical

Climate change may result in long term shift of climate pattern such as rainfall pattern, sea level changes and heat waves.

Birla Cellulose relies on surface water for our operations and inadequate supply can impact operations. We have aggressively reduced water consumption and augmented rainwater harvesting and storage.

Market

Consumer preference is changing and there is more demand for low-carbon products. **Birla Cellulose continually monitors the demand and invests in low carbon products.**

Reputation

Reputation risk may result in loss of investors, customers, value chain partners, if an organisation is not transitioning to a low carbon economy. **Birla Cellulose's GHG, Energy and Water stewardship roadmap is aligned to the expectations of the stakeholders with respect to climate change. We take inputs from leading organisations to shape our policies.**

Acute physical

Extreme weather events such as floods, storms and heatwaves are external factors that cannot be controlled and pose challenges for the operations in certain geographies. **These risks are evaluated for each site and risks scenarios are prepared to handle and mitigate impacts of natural calamities.**



REGULATORY COMPLIANCE RISKS

Being a global business, we have operations in different geographies. Right to operate in a particular geography requires us to follow the law of the land and all the regulatory compliances.

Any gaps in compliance or awareness of the local laws can lead to risks in carrying out business in those geographies.

We track compliances and regulatory framework of regions and countries where we operate through ENHESA tool. We also conduct a series of internal and external audits to ensure we comply with all the current legal requirements and capture any new requirements that may come in the future.

Birla Cellulose is disclosing the performance through GRI based reporting, ZDHC platforms, and SAC's Higg FEM platform. Birla Cellulose website contains important policies, performance, audit reports, certifications and many documents related to sustainability aspects of the business.



TRANSPARENCY

Our external stakeholders, such as customers, not-for-profit organisations, government, investors, require us to transparently report our performance on environmental, social, governance, compliance, and a multitude of other issues. They also expect us to share our long-term goals on sustainable business practices. GRI based reporting has become the norm for reporting sustainability.

Failure to report on issues concerning stakeholders may have implications on business operations, reputation and subsequently the loss of business. Social media influence also plays a major role in quickly mobilising consumers towards such issues.

Further, we have planned to achieve the EU BAT standards at all sites for sulphur emissions by 2022 which will reduce emissions of harmful gases in the environment beyond regulatory requirements.



HEALTH AND SAFETY RISKS

Health and Safety of employees, workers, contractors and surrounding communities of an organisation are of the highest importance to us and our stakeholders.

Incidents such as fire, injuries, leakages, work-related stress may pose a risk to them.

At Birla Cellulose, a health & safety committee is in place and we have a well-defined roadmap to reach the goal of 'Zero Harm'. Regular monitoring of vital health parameters for all employees and contractors working in the facilities is being done.

Further, we have planned to achieve the EU BAT standards at all sites for sulphur emissions by 2022 which will reduce emissions of harmful gases in the environment beyond regulatory requirements.





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TECHNOLOGY RISKS

Technologies continuously evolve leading to innovations in product and processes. Failure in adapting to new technologies can pose a risk of losing a competitive edge and technological leadership in the market.

We have been able to maintain our leadership in the industry because of our cutting-edge technologies and sustainability best practices. We are investing significantly in R&D activities and evaluating new technologies to develop new products. We also collaborate with technology-focussed institutes and suppliers to continually upgrade our processes and products.



COMMUNITY RISKS

Communities are becoming more sensitive to the environment and their impacts are being monitored and studied in more detail than ever before. The expectations are for a higher level of engagement, sharing of information, disclosures, active feedback and grievance management. Absence of this can create a negative sentiment that can affect site operations.

Engagement with surrounding communities is closely embedded in our business values. Our engagement programmes are focussed on the upliftment of the community and becoming a partner in the overall development of society.



EPIDEMIC AND PANDEMIC RISKS

A new risk has emerged in the form of COVID-19, which has the potential to disrupt not only businesses but the global economy. COVID-19 has impacted almost all the nations and led to a disruption in the business and life of the people. It was beyond imagination that it could soon turn into a disaster for the economies and supply chains.

Birla Cellulose has developed Business Continuity Plans to prevent and recover from risks related to the pandemic. BCPs are in place to protect our employees, customers, surrounding community and stakeholders from such threats. Our plans comprise actions that will facilitate safe operations of business units in such unprecedented situations.



REPUTATIONAL RISKS

Loss of reputation can happen due to several reasons and can pose serious issues for the organisation. In today's digital age and proliferation of social media, information travels faster from one part of the world to another. The customers, investors, and regulators are extremely conscious of the public perception of their own action.

A loss of reputation on any account would mean that customers, investors, regulators and other external stakeholders may quickly distance themselves from the company with a soiled reputation. Loss of reputation can be due to unethical conduct by a company or financial frauds, human rights violation, use of child labour, poor health and safety of employees, not taking care of surrounding communities, low employee satisfaction leading to employees working against the company, product failures, etc.

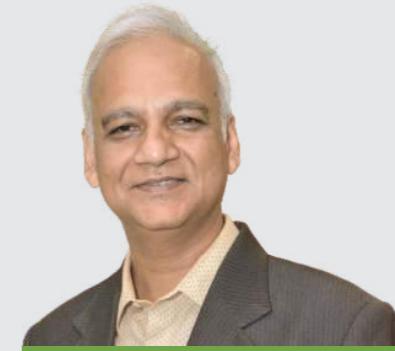
Birla Cellulose consistently monitors sustainability performance by putting in place strong systems for governance with multi-level checks and internal and third-party audits.



SUPPLY CHAIN TRACEABILITY & SUSTAINABILITY

The consumers and stakeholders are increasingly demanding sustainability credentials of the entire supply chain of products. They want brands and retailers to take full ownership and accountability of the social and environmental aspects in their supply chains. Any non-compliant partner in the supply chain is a big risk to reputation and business. For example, an MMCF made using wood sourced from endangered forests can lead to a quick kill of any brand's reputation beyond repair and can result in loss of business. This requires customer-facing brands and retailers to be controlling their supply chain, and the partners to adhere to sustainability best practices.

Birla Cellulose addresses this risk by providing complete transparency of the value chain - from forest to fashion, using advanced Blockchain-based solutions. All our major suppliers have also implemented and adhere to the supplier code of conduct.



Mr. Mukul Agrawal
Chief Sustainability Officer

Q What is the progress on implementation of the Sustainability Strategy of Birla Cellulose and how is it tracked?

The specific objectives have been defined with key performance indicators for the five pillar strategy encompassing sourcing, manufacturing, products, partnerships and social aspects. We have made good progress in all areas and continued to improve our sustainability performance. To increase transparency and communication of our sustainability journey, we have added the important initiatives in KPI matrix in the sustainability report strategy section. Also, each chapter on the five pillars gives the highlights of what is achieved and challenges that we face going forward. I hope that the readers would find it useful to navigate using this matrix. The progress of sustainability KPIs and initiatives form an important part of planning and review process of each function, and are reviewed by the executive committee at the business level and the business review council.

Q What is the importance of collaborations in creating sustainability impacts and what is Birla Cellulose doing in this space?

The sustainability challenges in the industry are vast and there are opportunities in improving the performance in each and every area of the value chain. We believe that a multi-pronged collaborative approach is must to create a bigger and broader impact. Our collaboration with our stakeholders has helped us learn and adapt to new technologies, best practices, and also apply them not only in our own processes but also in our upstream and downstream value chain and continually improve the sustainability performance. We believe in building a relationship of trust and transparency through continuous engagement with our stakeholders that sets a foundation for valuable partnership, creating positive value for all our stakeholders. Our collaboration encompasses sustainable innovations, developing new best practices, environment protection and working on shared goals. Some of the major collaborations were the development of ZDHC Responsible MMCF production standards, Full Cycle Textile project with Fashion for Good, Forest Conservation on boreal forests in collaboration with local communities along with Canopy and establishing reverse logistics for textile waste in the industry to collect industrial cotton waste. Given the rising importance of nature based MMCFs as a more sustainable choice for the future fashion system, it is extremely important that the future value chain transitions to a more sustainable and circular one.



Birla Cellulose
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Sustainable Business Strategy

Sustainability at Aditya Birla Group means 'Think about Tomorrow, Today', it is about taking responsibility for our actions today to assure the well-being of the future generations.

Over the last several decades, Birla Cellulose has sustained a leading position in the global MMCF industry by integrating sustainability practices at the core of business strategy, creating a positive value for all the stakeholders. We have also catalysed our efforts in conserving and rejuvenating natural resources for the future.

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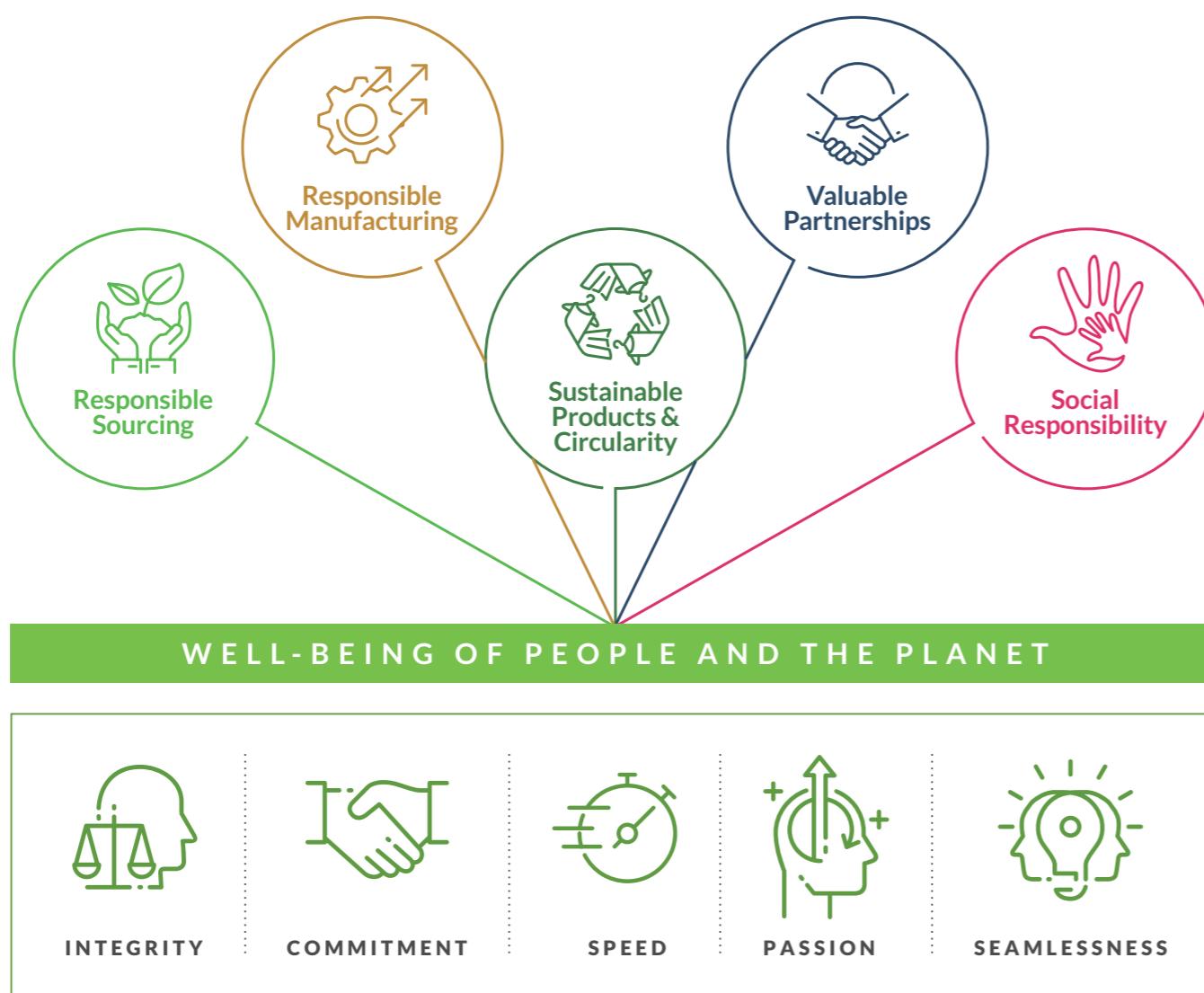
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Framework and the Scope

The United Nations Sustainable Development Goals (UN SDGs), together with materiality issues and the Circular Economy principles, constitute the framework of our sustainability strategy. Five Pillars have been incorporated in the strategy to ensure complete value chain and cover all aspects related to sustainability. At the core of the strategy is Well Being of the People and the Planet which inspires each of the five pillars.



RESPONSIBLE SOURCING



Responsible Sourcing principles help us procure all our materials and services from sustainable and ethical sources. We have the most competent and high-quality suppliers' base. The key materiality issues in this pillar are wood sourcing, biodiversity and sustainable supply chains.

SUSTAINABLE PRODUCTS & CIRCULAR ECONOMY



Sustainable Products are the outcomes when we listen to our customers and give them innovative solutions while minimising the negative impact on human and environment health and promote circularity. New products which are more environmentally friendly or low-carbon and use recycled fibres from cellulosic waste (circular economy) are the need of the hour.

SOCIAL RESPONSIBILITY



Social Responsibility aims for inclusive growth, development and safety of the communities, our employees, our partners and the under-developed sections of society who need it the most. The key issues which are associated with this pillar are occupational health & safety, talent management, gender equality, poverty, good health and well-being.

RESPONSIBLE MANUFACTURING



Responsible Manufacturing is the mainstay of our entire business and this is achieved by adopting the best available technologies, applying benchmark best practices and strengthening of the closed-loop manufacturing processes. Some of the key issues material to this key pillar of the strategy are closed-loop manufacturing, chemical, water and waste management, GHG reduction and transparent communication.

VALUABLE PARTNERSHIPS



Valuable Partnerships is our endeavour to work together with our stakeholders, understand each other's expectations and obligations and convert them into meaningful long-term partnerships for shared benefit. Partnerships with key stakeholders like customers, suppliers, shareholders, multi-stakeholder organisations and driving the agenda for a more sustainable world. We deal with issues such as the circular economy, reducing inequalities through partnerships.



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Management Approach

Aditya Birla Group's Corporate Principles and Code of Conduct are the ideologies we follow for ensuring good corporate governance in our organisation. The Principles and Codes are practiced and monitored within the group with an aim to follow the highest standards of ethics and values.

Corporate governance refers to a set of laws, regulations and good practices that enable an organisation to perform efficiently and ethically generate long-term wealth to create value for all its stakeholders.

Our Corporate Governance Principles and Philosophy



We are committed to the adoption of best governance practices and its adherence in the true spirit, at all times. These practices are self-driven, reflecting the culture of the trusteeship that is deeply ingrained in our value system and reflected in our strategic growth process.

Six basic tenets of our governance philosophy are:

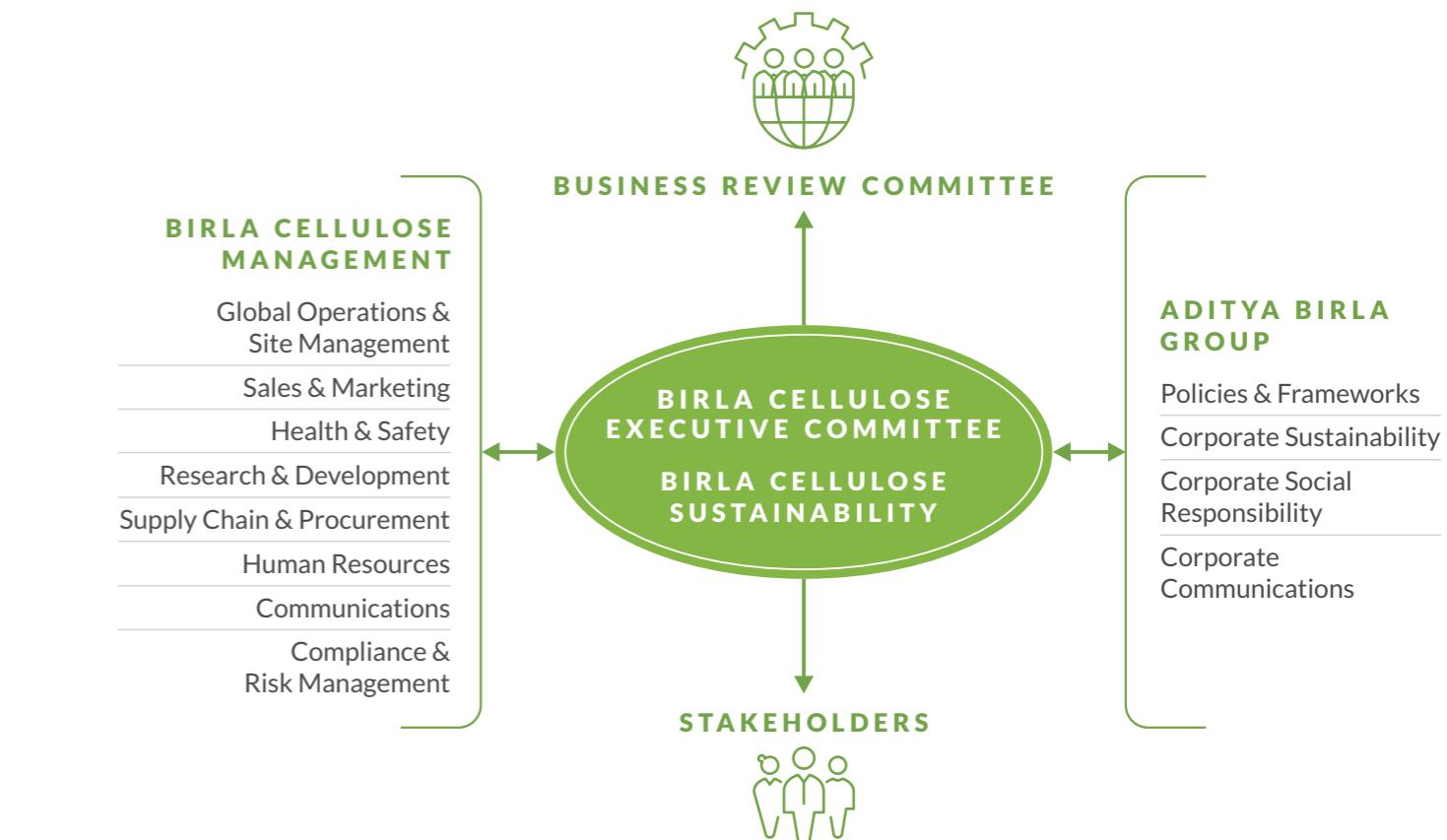
Accountability to the company and stakeholders	Equitable treatment to all shareholders	Strategic guidance and effective monitoring	Protection of minority interests and rights	Transparency and timely disclosure	Resolution of stakeholder concerns
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In line with the above philosophy, Birla Cellulose continuously strives for excellence through the adoption of best governance and disclosure practices. Our sustainable business programme is supported by a solid governance structure that engages senior management as well as those on the ground. This ensures that all colleagues are driving change uniformly.

Governance Structure for the Implementation of Sustainability

Birla Cellulose is a group of several privately held companies and is a part of Aditya Birla Group headquartered in Mumbai, India. The Business Director (CEO) is responsible for sustainability and climate-related issues in the organisation and these issues are reviewed by the Business Review Council (BRC) which is the equivalent of Board of Directors in the Birla Cellulose governance structure. The BRC comprises of Aditya Birla Management Corporation Pvt. Ltd. Directors which meets quarterly to review the business progress, various initiatives and provide guidance and oversight of the business performance including sustainability.

Birla Cellulose's Business Director heads the Executive Committee (ExCom) of Birla Cellulose comprising of Head of Manufacturing Fibre Business Operations (COO Fibre), Head of Pulp Operations (COO Pulp), Chief Sales & Marketing Officer (CMO), Chief Technology Officer (CTO), Head of Finance (CFO) & Chief Human Resource Officer (CHRO).





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The business strategy, business goals, business plan and annual financial plans are reviewed and approved by BRC. The execution of the business plan and strategy is the responsibility of BRC.

BRC and ExCom approves the sustainability and climate goals and provide the resources and budgets to achieve these goals and ensure climate-related risks are addressed as a part of the business strategy. The annual planning and capital expenditures for the deployment of the sustainability strategy are approved by BRC and ExCom.

Chief Sustainability Officer appointed by ExCom, works in close collaboration with all the functions (operations, marketing, safety, R&D, HR, Finance) to deploy the initiatives and monitor the sustainability performance.

At the site level, Sustainability & Safety Committees headed by the Unit Head ensure the strategy is implemented on ground. They are mandated to deliver the requirements outlined in our policies appropriately for the site and to put action plans in place. Central Sustainability Cell supports the sites in executing the policies and programmes related to Sustainability.

Policies and Standards

We have developed policies for our Business taking into account our Group Policies and Values. We are working to improve our management systems and by doing so, we expect our performance at all levels to improve towards international best practices. We empower our employees to learn, understand and apply improvement techniques. We aim for everyone to be involved in our efforts to reach higher standards of performance.



Wood Fibre Sourcing Policy



Environment Policy



Water Stewardship Policy



Energy & Carbon Policy



Health Policy



Safety Policy

 For a deeper understanding of our policies visit:
www.sustainability.adityabirla.com/policies

Certifications

We follow global standards and business processes that are good for the health of the planet and its people. Our environmental and quality practices, and product certifications from globally reputed agencies, enable us to build professional credibility among our stakeholders, and is a hallmark of our commitment towards human and environmental health.

We have the following certifications and management systems for applying global best practices in our business processes.

SUSTAINABLE FORESTRY CERTIFICATIONS

ISO 9001:2015 CERTIFICATION

ISO 14001:2015 CERTIFICATION

OHSAS 18001:2007 / ISO 45001:2018 CERTIFICATION

ISO 50001:2011 CERTIFICATION

SA 8000:2014 CERTIFICATION

OEKO-TEX® STANDARD 100

REACH

SMETA AUDIT | SEDEX

USDA BIOBASED CERTIFICATION

OK CERTIFICATION





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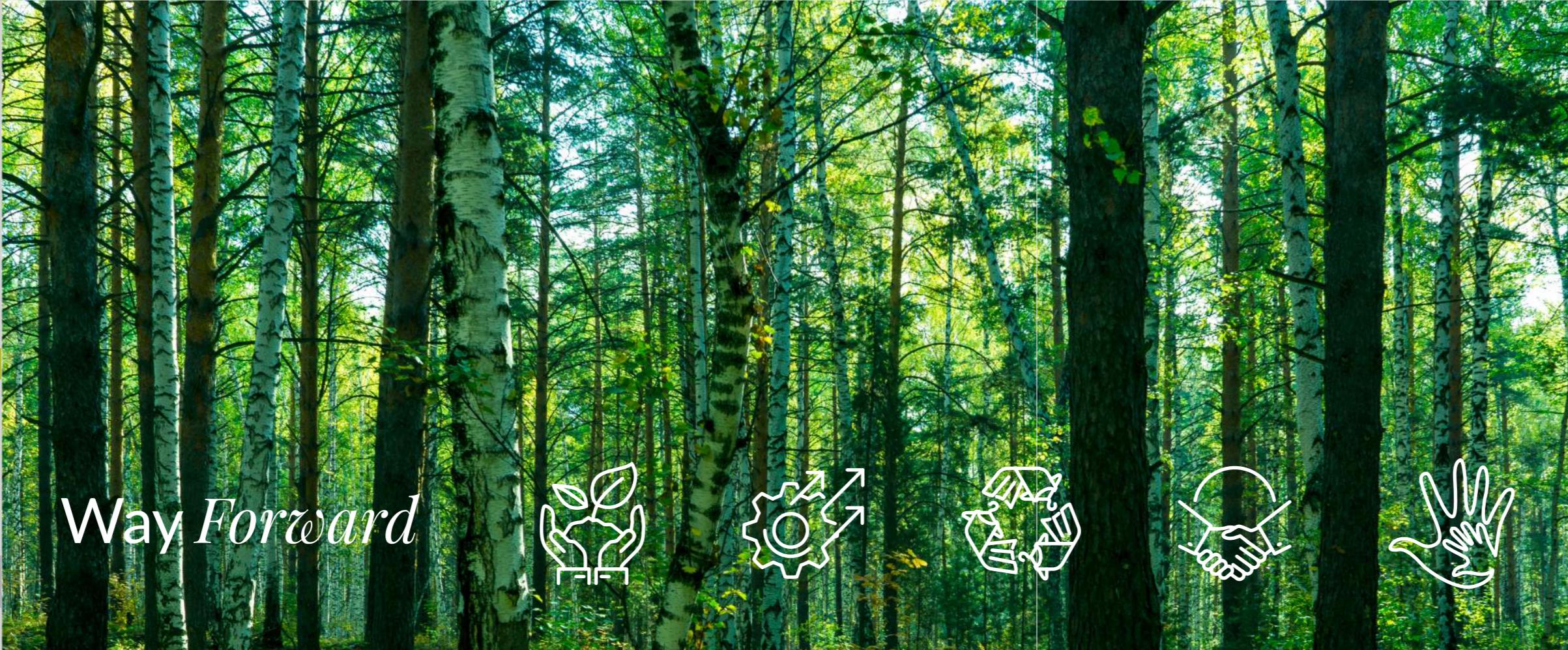
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Way Forward

From Conservation to Rejuvenation

Sustainable supply chains are crucial in current times and especially in the wake of a pandemic like COVID-19. Our efforts on sourcing are directed towards rejuvenating the environment and not just conserving it.

FOCUS

- To source wood from controlled and certified sources only with complete traceability
- Assess key and critical suppliers for a sustainable supply chain based on internationally recognised standards
- Localising supply of goods and services, and developing local communities
- Use of ZDHC MRS to substitute hazardous chemicals in the supply chain

From Good Practices to Global Benchmarks

This is our continuous endeavour at Birla Cellulose to move towards global benchmarks and implement good practices in the operations.

FOCUS

- Develop a roadmap to reduce GHG intensity by 30% by 2030.
- Continually reduce water footprint and establish new benchmarks
- Application of EU BAT Standards for closed-loop production and resource efficiency
- Implementing global standards such as Higg FEM, ZDHC MMCF Standards at all sites
- Developing applications for waste going to landfill thereby reducing waste generation

From Transactional to Transformative Partnerships

Through collaborative partnerships, Birla Cellulose will be implementing scientific and technological advances based on our partnership with multi-stakeholder organisations, think tanks, technology providers and experts.

FOCUS

- Ensure sustainable forestry and biodiversity practices by actively collaborating with organisations and non-profits like Canopy, WWF
- Continue working with multi-stakeholder organisations to communicate our programme and seek feedback for improvements
- Improving sustainability practices through capacity building across the value chain
- Implementing 'state-of-the-art' technologies via collaboration with research institutions, technology and equipment suppliers, experts and consultants
- Collaborating with communities, NGOs for need-based CSR projects to uplift weaker sections of the society

From Product Focus to Consumer Solutions

Increasing the portfolio of low-carbon products and creating value for downstream partners and consumers as a supplier of sustainable products.

FOCUS

- Increasing the share of sustainability-enhanced products in our product basket
- Increasing the use of alternative feedstock such as pre- and post-consumer waste in our products
- Collaborations and co-branding initiatives with leading brands
- Traceability and transparency through blockchain-enabled solution across the value chain
- Globally recognised certifications of our products conforming sustainability credentials

From Need Alleviation to Systemic Transformation

Birla Cellulose has been taking up need-based initiatives for people and communities. We are now in the process of bringing cultural and socio-economic transformation.

FOCUS

- Goal 'Zero' - No Loss Time Injuries (LTI) in our facilities by applying world-class safety practices
- Talent management at all levels to build an exceptional workforce
- Working towards women empowerment in the geographies we operate and launching programmes to train them to be financially independent
- Quick redressal of grievances raised by internal and external stakeholders
- Need-based community engagement programmes following the ABG guidelines for socio-economic development



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Sustainability Goals & Targets

Birla Cellulose will drive to a leadership position in the sustainability space and the most sustainable viscose manufacturer, with the implementation of sustainability strategy in conjunction with UN SDGs.

We aspire to stay ahead of the curve in critical areas of wood sourcing, closed-loop system, resource consumption, sustainable products and community work.

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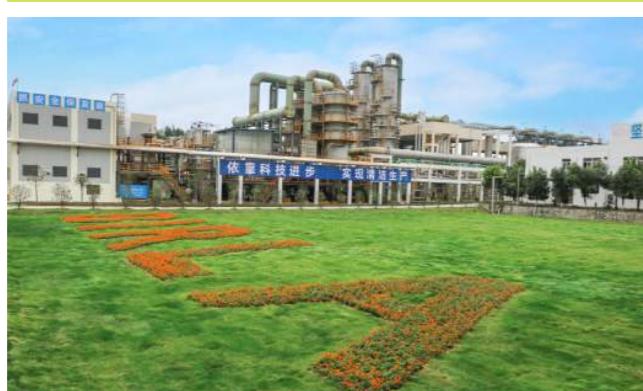
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GOAL 1



Reduce sulphur-to-air release by 70% at all fibre sites by the year 2022

We will implement closed-loop technologies at all the fibre sites to achieve the EU BAT norms for sulphur-to-air release by end of the year 2022, thereby achieving a 70% reduction from baseline of FY15.

We have reduced sulphur-to-air emission by 21% over the years and shall meet EU BAT norms by end of the year 2022. Progress of this goal is detailed in Responsible Manufacturing section.

GOAL 3



GOAL 2



Reduce specific water consumption by 50% in VSF manufacturing by the year 2025

We are applying innovative technologies to reduce water consumption, including 'state-of-the-art' membrane-based technologies. Currently, we have set global benchmarks for water intensity at about 20 m³ per ton of fibre which is much lower than even the stringent EU BAT norms for water consumption (35-70 m³/TF). Water consumption has reduced by 35% over the years and operating well below the limit prescribed by EU BAT norms. Progress of this goal is detailed in Responsible Manufacturing section.

Reduce the Loss Time Injury Frequency Rate (LTIFR) below 90% over a baseline of FY15

We have the highest priority for safety for all, including employees, suppliers and communities, where we operate. LTIFR has reduced over time due to a strong focus on safety. From FY15 to FY20, we have reduced our LTIFR by 50% and expect to meet the target ahead of our timelines. Progress of this goal is detailed in the Social Responsibility section.

GOAL 4



Assess and improve the sustainability performance of key suppliers by the year 2025

The suppliers will be assessed for their sustainability, safety and health practices, legal compliances, ethics and labour rights. Globally recognised standards will be the criteria for evaluation for supplier selection and suppliers will be encouraged to adopt these best practices.

We have started the supplier assessment for key suppliers. Progress of this goal is detailed in the Responsible Sourcing section.

GOAL 6



Development of alternative applications to reduce the solid waste by 25% by 2030 over FY15 baseline

The solid waste generated out of the viscose process is already partly recycled or reused. However, there are opportunities to further reduce waste and these are being evaluated for alternative applications in the infrastructure industry in close collaboration with other industries. Progress of this goal is detailed in the Responsible Manufacturing section.

GOAL 5



Increase the use of alternative feedstock such as pre- and post-consumer waste cellulose

Our R&D team is working on increasing the use of alternative feedstock such as pre- and post-consumer waste as feedstock to the viscose process. The intensive efforts are in progress to increase the share of recycling by working on the technology as well as working on the reverse logistics supply chain to optimise the process. We have commercialised and launched Liva Reviva with 20% pre-consumer waste in FY19. More progress of this goal is detailed in Sustainable Products section.

GOAL 7



Empower 50,000 women by making them financially independent on chosen vocations by the year 2030

Gender equality, women empowerment and education of the girl child are the key developmental gaps in some of the countries where we operate. We target to empower 50,000 women by capacity building and making them financially independent by 2030. Progress of this goal is detailed in the Social Responsibility section.



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MATERIALITY PERFORMANCE AND TARGETS

Sustainability Pillar & Strategic Message	Material Topic	Linkage with SDGs	Key Performance Indicators	Target	Baseline	Status in FY19	Status in FY20
Responsible Sourcing	Responsible Wood Sourcing		Percentage of sustainably sourced wood	100% controlled wood sourcing	93% in FY18	100% controlled wood sourcing achieved	
	Biodiversity		Conservation/protection of Ancient & Endangered forests	Conservation work in Boreal forests	-	Conservation of Boreal Forests in collaboration with Canopy	
	Sustainable Supply Chain		Assess the sustainability performance of key suppliers	100% evaluation of critical suppliers by 2025	-	-	Framework established & 10% of key suppliers assessed
Responsible Manufacturing	Climate Change		30% GHG intensity reduction roadmap by 2030	Develop roadmap by end of 2021	FY19 = 100%	-	Roadmap under development
	Closed-loop Manufacturing		Adaption of EU BAT technology for VSF manufacturing	Reduce sulphur-to-air emissions by 70% by year 2022	FY15 = 100%	16% reduction over the baseline	21% reduction over the baseline
	Water Footprint		Reduction in water intensity in VSF manufacturing process	Reduce water intensity by 50% by 2025	FY15 = 100%	30% reduction over the baseline	34% reduction over the baseline
			Reduce pollution load in effluent by 2022	Reduction in COD to meet EU BAT compliance	FY18 = 100%	11% reduction over the baseline	23% reduction over the baseline
Responsible Management	Waste Management		Reduction in waste to landfill and incineration	Reduction by 25% by 2030	FY19	-	30% reduction in the waste going to landfill & incineration over FY19
	Sustainable Products & Circular Economy		Scaling of circular products utilising textile waste	Increase waste used and recycled content	-	R&D Stage	Liva Reviva launched with 20% pre-consumer waste
Sustainable Products			Growth of eco-enhanced products	No. of products and scaling-up	FY19	Livaeco (Viscose), Spunshades, Excel (Lyocell)	Launched Livaeco (Modal) and Liva Reviva
	Traceability		GreenTrack™ Blockchain Technology	Visibility from forest-to-fashion by 2021	FY18	Visibility from fibre-to-retail	100% visibility from forest-to-retail
	Transparency		3rd party audits at all sites by 2023	Higg 3.0 FEM, ZDHC, CanopyStyle Audit, FSC®, ISO Standards, EU BAT	FY18 = 84%	92%	93%
Valuable Partnerships	Valuable Partnerships		Major collaborative efforts across industry	Participation in major multi-stakeholder initiatives	-	5 organisations	7 organisations
Social Responsibility	Talent Management		Percentage of employees receiving regular performance and career development reviews	100% coverage	-	100%	100%
	Occupational Health & Safety		Reduce Lost Time Injury Frequency Rate (LTIFR)	Reduce LTIFR below 90% over FY15 baseline	FY15	81% reduction	85% reduction
	Gender Equality & Reduce Inequality		Women Empowerment	To empower 50,000 women to be financially independent by 2030	FY15	9,977	13,533
	Community Engagement		Total no. of beneficiaries	Community Engagement in Health & Education	FY15	1,286,906	1,636,641

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ABG's Contributions to Fight Against COVID-19

INR 500 crore to fight the pandemic

- INR 400 crore donated to PM CARES Fund
- INR 50 crore grant to FICCI-Aditya Birla CSR Centre for Excellence
- INR 50 crore towards 280,000 Personal Protective Equipment (PPE), and ventilators, along with the supply of 1 million N95 masks

OUR RESPONSE TO COVID-19

At the end of 2019 and as the new year began, we were exposed to a pandemic created by the novel Coronavirus. An imperceptible jolt to the entire world, it spread across nations with unprecedented speed and resulted in widespread loss of lives and disrupted economies globally.

Relief measures started pouring in from several corporates, and Aditya Birla Group (ABG) too joined this fight against the pandemic. ABG has always been actively contributing to the social and economic development of the communities in which we operate.

When COVID-19 impacted the lives and livelihoods of billions of people across the globe and disrupted businesses, we stepped forward with a multi-pronged response to the pandemic with financial, material, and healthcare support for the community.

Besides reassessing our business, we kept our focus on our employees, who fulfil the needs of the society through their unique capabilities. Through various initiatives, we ensured that our employees' health and well-being are not compromised. Some of the key initiatives include:



Activated COVID-19 Facility

- ABG activated a 100-bed COVID-19 facility at Seven Hills Hospital in Mumbai, in partnership with the city's civic body
- Initiated a round-the-clock helpline in partnership with the Maharashtra Government
- Earmarked more than 200 beds across locations including Ujjain, Pune, Hazaribagh, Rayagada, Solapur and Kharach

Birla Cellulose Actions to Fight the Pandemic

With community care and service in our DNA, Indian and Overseas Units of Birla Cellulose rendered the following services during the COVID-19 outbreak:

- Distribution of food packets, water, grocery kits to local villagers, pregnant women, policemen on duty, migrants and the underprivileged.
- Provided PPEs like face masks, shields, hand gloves to local people and supplied oxygen cylinders to local hospitals.
- Sanitation in surrounding villages, created awareness about pandemic through means like paintings on the compound walls of factory, schools and colony.
- Canada based AV Group NB and AV Terrace Bay donated \$150,000 and \$50,000 respectively towards COVID relief measures such as Foodbank, PPE for healthcare workers etc., and Domsjö Fabriker-Sweden provided ethanol for sanitiser production.
- SOP for transportation of suspected/infected individuals to a primary isolation ward/room was established
- The group wide 'ABG Code Red' App became one point of contact for all medical requirements and support for COVID-19
- Adopted digital technologies and virtual meetings as a result of 'work from home' during lockdown



SAFETY FOR OUR EMPLOYEES

Employee safety is always high on our priority list. During COVID-19, employee safety and health became paramount. Some of the key initiatives taken for employee health and safety includes:

- Strict checks and inspection measures put in place in plants and offices including extensive screening with temperature gun and thermal scanning tunnel at all entry gates, monitoring of travel history of employees and dependents
- Usage and deployment of sanitisers and suitable masks were undertaken
- Standby healthcare facilities provided for emergency quarantine
- Distribution of Vitamin C tablets to the employees
- SOP for transportation of suspected/infected individuals to a primary isolation ward/room was established
- The group wide 'ABG Code Red' App became one point of contact for all medical requirements and support for COVID-19
- Adopted digital technologies and virtual meetings as a result of 'work from home' during lockdown



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Responsible Sourcing

- Globally, ranked #1 in Canopy's Hot Button Report 2020 with 'dark green shirt' rating
- Plastic waste management

- 100% wood is procured from sustainable and controlled sources
- Forestry conservation

- Implementation of Supplier Assessment & Evaluation thereby addressing SDG 8
- Contributing to SDG 13 by sequestering carbon through managed forests

Key Challenges 2020-21

- Limited availability of certified wood
- Inefficient reverse logistics for pre-consumer waste



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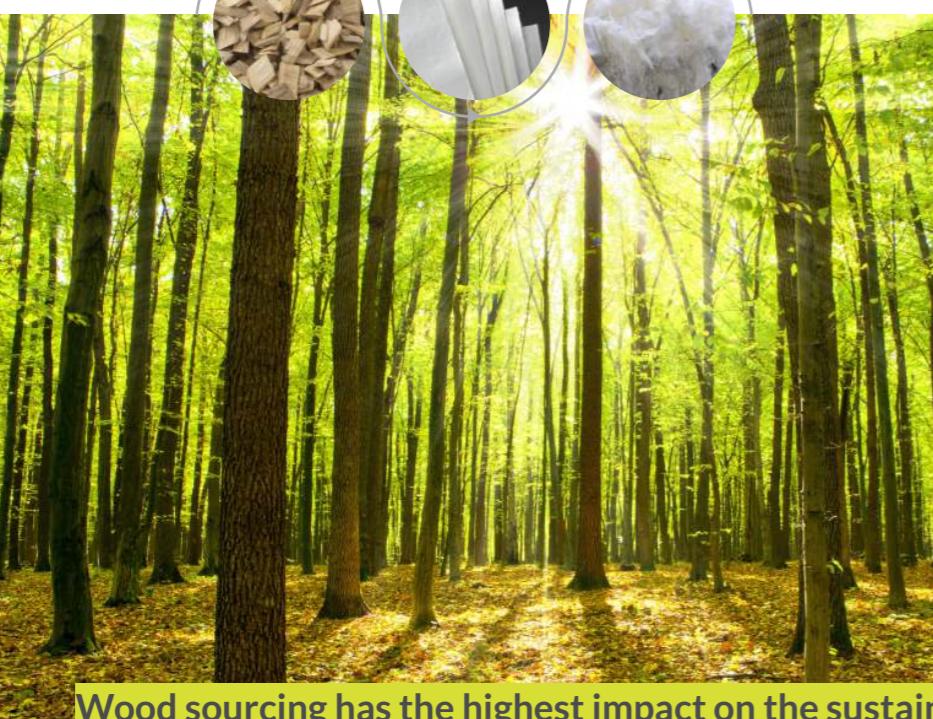
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Wood sourcing has the highest impact on the sustainable supply chain for the MMCF industry and thus, Birla Cellulose has a very stringent 'Wood Sourcing Policy' that ensures protection of ancient and endangered forests.

At the same time, we have also worked upon developing fibres with alternate raw material sources that would ease the burden of virgin wood requirement.

Our procurement function applies 'Supplier Code of Conduct' for the procurement of raw materials and services. Critical suppliers are assessed for their sustainability performance and are required to comply with this code of conduct and undergo a 'supplier assessment process'. We engage with our suppliers through long-term supply agreements and include environmental, social and governance (ESG) criteria along with economic criterion for their evaluation and their selection.

Risks Associated with Procurement

Procurement is not just sourcing the goods and services for our use but also a responsibility towards addressing the associated risks related to Humans | Environment | Ethics etc.



Wood has the highest priority as there are many risks associated with its sourcing such as sourcing from controversial sources, deforestation, etc. Forests, on one hand regulate the climate by sequestering the carbon dioxide which has direct impact on global weather patterns, and on the other, support biodiversity.

Supplier Sustainability Assessment

Supplier Code of Conduct

Our Supplier Code of Conduct is aimed at creating a positive impact on sustainable business practices across the value chain and its compliance by our suppliers is a key criterion for selection and partnerships. All goods or service suppliers of Birla Cellulose are expected to fully understand the requirements of this Supplier Code of Conduct and apply it within their operations and in all their dealings with Birla Cellulose.

The Supplier Code of Conduct covers the following key aspects:



HUMAN RIGHTS



ENVIRONMENT, HEALTH AND SAFETY (EHS)



APPLICABLE LAWS & REGULATIONS



BUSINESS ETHICS

The programme covers the following:



FAMILIARISING ALL STAKEHOLDERS WITH SUSTAINABLE PROCUREMENT POLICY



100% SIGNOFF ON SUPPLIER CODE OF CONDUCT



IDENTIFICATION OF CRITICAL SUPPLIERS



EVALUATION AND MONITORING OF PERFORMANCE AND SUPPLIER SELECTION



GIVING FEEDBACK FOR IMPROVEMENT



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Responsible Wood and Dissolving Pulp Sourcing

Dissolving wood pulp is the main raw material for manufacturing of fibre, while wood sourced from sustainably managed forests is the main raw material for pulp. Therefore, responsible sourcing of wood carries very high importance and weightage in our control philosophy. This responsibly produced fibre is made into garments for our customers and enables them to be more sustainable.



Wood Sourcing Policy

We strictly implement our requirements of wood supply across all our pulp suppliers to ensure that the wood used by them are sourced from sustainably managed forests and plantations, while also following the laws of the land.

Birla Cellulose is committed to procuring wood only from sustainable sources

and our Wood Sourcing Policy has laid out that we will not procure wood which is:

Illegally harvested

Violating traditional and civil rights

Derived from uncertified High Conservation Value Forest

From plantations established after 1994 through the conversion of natural forests or converted to non-forest use

From forests in which genetically modified trees are planted

From Ancient and endangered forests, or endangered species habitat

Our wood sourcing policy can be accessed [here](#).

The pulp used in our manufacturing process is controlled wood and has certifications from FSC®, SFI® and PEFC™. We continue to implement strict controls on wood sourcing to ensure our sustainability practices start right from the first stage of procurement. Apart from ensuring certifications of harvested wood from leading organisations working towards forest management, we keep a check on the source of the wood procured, valid across all our operations.

All the pulp and fibre manufacturing sites of Birla Cellulose are FSC® CoC certified.

Sustainable Forestry & Climate Change

Forests are one of the vital ecosystems and are the lungs of our planet. Another striking feature of the forest is the ability to store carbon, sequestering carbon out of the atmosphere in their vegetation, soils, and roots. So, forests are critical to achieve climate change goals as outlined in SDG 13 and the Paris Agreement. It is estimated that currently, forests absorb nearly 40% of total GHG emissions. As per GHG protocol, greenhouse gas inventories include not only emissions from source categories, but also removals by carbon sinks. These removals are typically referred to as carbon sequestration.

Birla Cellulose ensures positive growth of forests managed by it, directly resulting in sequestering of CO₂ and contribute in reducing global warming impact. Our carbon sequestering was 3.44 million tCO₂e in 2019 due to directly managed forests, completely offsetting our scope 1 & 2 emissions.





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CASE STUDY

Birla Cellulose is ranked #1 in Canopy's Hot Button Report 2020



Ranked No. 1 in this year's Hot Button Ranking, Birla Cellulose of Aditya Birla Group has also been accorded with a 'dark green shirt' (which is the highest 'shirt' category in Hot Button assessment) for the first time, by the environmental not-for-profit Canopy in the latest Hot Button Report 2020 for its continuous effort on the conservation of Ancient and Endangered Forests.

The top ranking in the environmental report reflects the company's relentless attempt to improve sustainable wood sourcing practices, conservation of forests, innovations in development of next generation fibre solutions to reduce the impacts on forests, and embrace circularity and transparency across its value chain.

A deeper shade of green ranking affirms better performance of the company in its implementation of its CanopyStyle commitments, with progress on next generation fibre solutions and the advancement of conservation in a critical landscape.

Aditya Birla Group is proud to have invested substantially in conservation solutions while maintaining opportunities for harvesting by First Nations and local communities in one of our sourcing areas. **The report recognises that Aditya Birla is a key stakeholder poised to use their significant influence to create socioeconomic and ecological certainty.**

Currently, more than 320 global brands, with combined annual revenues of over USD 578 billion, are looking to source from producers rated as green shirt and low risk of sourcing from Ancient and Endangered Forests in the Canopy Hot Button Report.

With 72% of global MMCF suppliers voluntarily undergoing CanopyStyle audits to confirm and address any risk of sourcing from Ancient and Endangered Forests, MMCF producers are adapting sourcing practices, indicating that the industry is going through a positive transition towards a more sustainably sourced and produced fibre.

Biodiversity Management

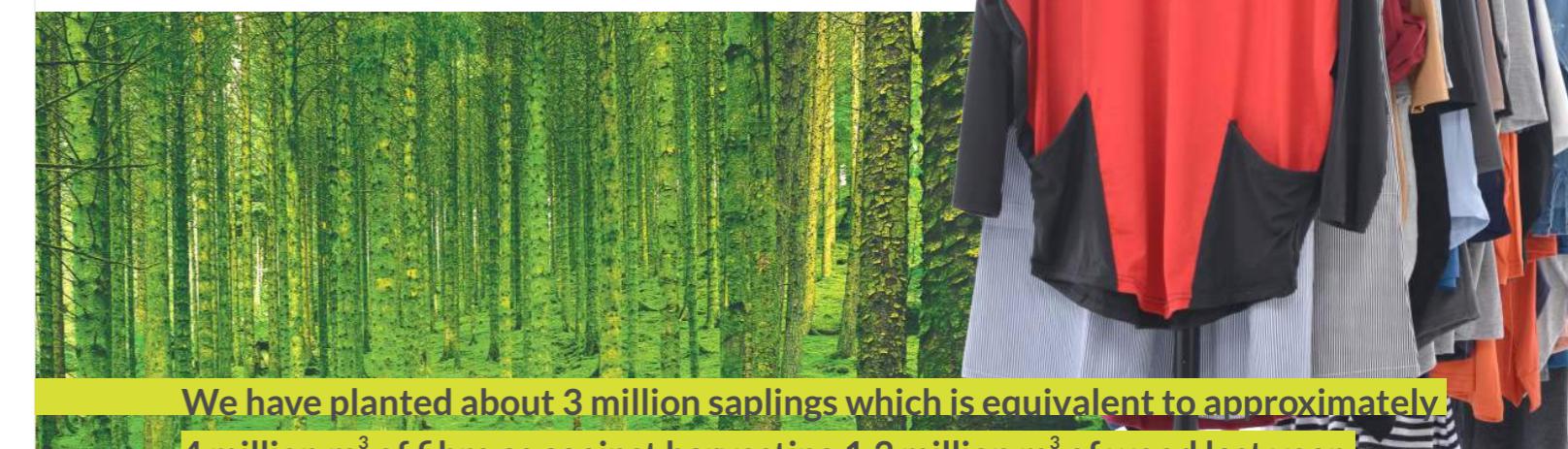
We recognise that our business can affect the local ecology of the areas where we operate and that we have an important role to play in protecting the fragile ecosystems around us. All the activities right from wood procurement to manufacturing of pulp & fibre and disposal of the product after its useful life, can have an impact on biodiversity if not managed responsibly.



Conserving Ancient and Endangered Forests

Forests take hundred to thousand years to evolve. Many of the forests and their trees are more than 150 years old. These Ancient and Endangered Forests are key to steadyng our climate as they home many threatened animals and birds. Forests are one of the vital ecosystems that we have and are considered to be the lungs of our planet. Another very important feature of forests, is that they are carbon-storing powerhouses, sequestering carbon from the atmosphere by holding it in their leaves, soils, and root systems through a process called photosynthesis. This stored carbon is known as biomass, and when forests are felled, the stored carbon is released into the atmosphere resulting in global warming. This is why it is important to protect A&E forests and promote the growth of forests.

In AV Group NB Inc. Canada, we have adopted sustainable forest management practices supported by laws, regulations and policies, supplemented by independent third-party certification meeting internationally accepted standards.



We have planted about 3 million saplings which is equivalent to approximately 4 million m³ of fibre as against harvesting 1.3 million m³ of wood last year.

We acknowledge how important forests are for maintaining the balance in the global ecosystem and strive to become a leading organisation that believes in utilising responsibly sourced materials from sustainably managed forests.

Alternate Feedstock

Birla Cellulose has also developed and commercialised recycled fibre 'Liva Reviva' from pre-consumer cotton fabric waste. These fibres not only reduce waste, but also help in reducing the dependency on virgin wood and hence, are favourable to the biodiversity.





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Chemicals are integral to both pulp and fibre production and some of the chemicals such as caustic soda, sulphur, zinc, finishing agents and additives are procured from suppliers with long-term agreements. They are used at various stages of viscose fibre production - from making pulp from woodchips to making fibre from the pulp.

We acknowledge the impact of the chemicals we use and have implemented a robust chemical management system that indicates our overarching strategies and intentions.

The suppliers of the chemicals are communicated our policy on no use of hazardous chemicals, especially ZDHC MRSL, in their manufacturing processes.

We are committed to minimising the impact of chemical utilisation and related risks associated with them on the surroundings. We have asked our suppliers to follow the ZDHC Manufacturing Restricted Substance List (MRSL) in their process.

We procure the majority of chemicals from local sources as much as possible. Most of the sites are backward integrated to produce sulphuric acid and carbon disulphide to avoid transportation of hazardous chemicals over long distances. Some of our sites also have caustic production co-located to avoid transportation. This helps to minimise our carbon footprint as well.

During manufacturing, we take all the measures such as following and implementing ZDHC Guidelines for MMCF production, air emissions, and wastewater treatment. After the useful life of textiles and garments, most of them are sent to landfills which release harmful emissions to the surroundings and lead to habitat loss.

Birla Cellulose produced MMCFs are easily biodegradable in soil, water and marine environment and compostable in home and industrial conditions.



Effective Chemical Management Programme

We have a Chemical Management Programme for safety and storage of chemicals in our facilities. Special attention is paid to labelling requirements and storage of these chemicals at the site. The chemicals are segregated based on an interaction matrix and have a containment dyke to prevent any uncontrolled spillage, in case of leaks.

Specific training is provided to the workers who receive and store these materials for safe handling and storage practices.

The safety documents such as Material Safety Data Sheet (MSDS), the risk assessment, compatibility study etc. are ensured before the material is purchased at the site. The policy ensures that proper preventive and personal protective equipment (PPE) are provided to handle the chemicals safely.



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Safety in Logistics

The transportation of chemicals is done in safe and government approved vehicles designed to carry such chemicals and are fit and suitable for its transport.

The drivers are specially trained for hazard management in case of any accidents. TREM Cards are provided for chemicals like carbon disulphide and sulphuric acid transportation. An Emergency Response system is established to take the case of any unforeseen incident. Stringent safety practices are applied in the transportation of other chemicals such as caustic soda and molten sulphur, etc.

Packaging & Packaging Waste Management

The packaging material and its proper design are critical for managing the risks from packaged chemicals. The packing material suitability is an important part of the discussion while procuring any chemicals and ensures that packaging is designed for safe handling and storage. The products must be labelled properly, and hazards must be identified with the proper Globally Harmonized System (GHS) signage is required on packing material.

There has been an initiative to reuse packing material. The bale wrappers used for packing fibres are sold to recyclers. The paper used for packing the pulp is recycled. The sodium sulphate bulk packing is recycled wherever the customers have the capability of doing this. For sodium sulphate, the bulk trucks have replaced the packing material in several sites where the customers have the facility to unload the bulk truck, so the use of packing material is totally avoided.



INITIATIVE

Plastic Waste Management

The plastic as packing materials and bags that come to the factory along with incoming materials such as chemicals and engineering goods are properly segregated, quantified and sold to an authorised recycler.

In Indian Units, the total quantity of plastic packaging material used for all our products (fibre, salt) is recycled by facilitating collection and reprocessing of equivalent quantity of plastic waste through recyclers. In addition to that, all the plastic waste that is generated at the sites is recycled responsibly through authorised recyclers.



Mr. Vinod Tiwari
COO - Pulp Operations

Q How are pulp operations a nature based solution for climate change?

In addition to wood being sustainably sourced, the pulping operation is also most highly self-reliant as far as energy consumption is concerned. 85-90% of our energy supply comes from renewable sources, generated in boilers by utilising Black/Red liquor that is formed during the wood pulping process. Also the pre-hydrosylate liquor generated in Kraft process is used to convert into biogas in anaerobic lagoons/digesters which is later used in lime kiln reducing usage of furnace oil.

Our managed forests are able to sequester CO₂ to the extent that it surpasses Scope 1 + 2 GHG emissions taking place at all pulp and fibre sites, making our business Carbon Neutral. Thus, responsibly produced MMCF could be a great nature based solution for climate crisis.

Q What are your programmes for forest conservation?

Birla Cellulose is proud to have invested substantially in conservation solutions at identified nearby forests where our pulp operations are located. We are maintaining socio economic values by supporting forest management activities, creating environment for employment and job creation, tree planting and silviculture treatments to increase yield. Also, we are investing in infrastructure creation/road building within the forest to protect water bodies, and assisting in protection of indigenous protected areas, parks, conservation reserves.

We are working in collaboration with Canopy to protect ancient and endangered forests by adopting sustainable forestry management practices. We also have close co-operation with First Nations communities in ensuring sustainable development of forest. Birla Cellulose has earned 33 buttons in Canopy's Hot Button Report to become the 1st MMCF producer with dark green shirt, which is a testimony to our forestry conservation practices.



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- Site at Thailand is compliant with EU BAT
- 3rd party verified average Higg (3.0) FEM scores of 92 at 7 fibre manufacturing sites
- Higg (3.0) FEM implemented at pulp sites

- Significant reduction in consumption of key raw materials
- \$170 million capex under implementation for EU BAT (closed-loop) technology

- Reduction in water consumption by 34% in VSF process over the baseline of FY15
- Reduction in sulphur-to-air emission by 21% over FY15 baseline

- Key Challenges 2020-21**
- Impact of COVID-19 on operations
 - Ensuring safety for the workforce under the new normal
 - Catching up with projects delayed due to COVID-19

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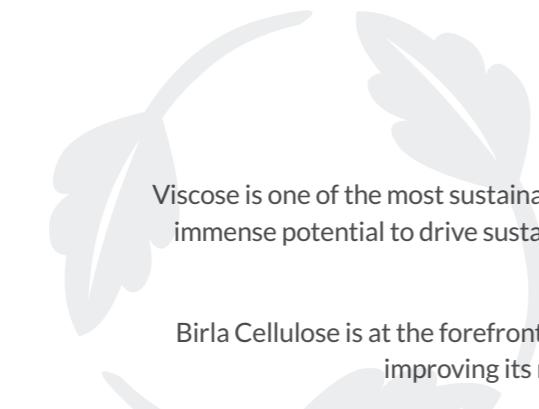
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Viscose is one of the most sustainable and versatile fibres available for the fashion industry. It has an immense potential to drive sustainability in the industry owing to its unparalleled credentials from the perspective of environmental and product attributes.

Birla Cellulose is at the forefront in sustainability and innovation in MMCF industry by continually improving its manufacturing practices and establishing new global benchmarks.

Birla Cellulose is executing closed-loop technologies at all the fibre manufacturing facilities investing USD 170 million by upgrading its existing setups which are directed towards implementing the Best Available Technologies (BAT) and achieving some of the most stringent global standards such as EU BAT Norms and ZDHC MMCF Guidelines at its fibre manufacturing sites.



The objective of these technologies is to keep the process material in the loop by re-using the waste generated from the processes as defined in principles of Circular Economy. Along with this, the health and safety of our employees, and the nearby communities are taken care of with the highest priority.

We lead the implementation of Higg (3.0) FEM globally in our MMCF manufacturing sites and have extended it to our pulp manufacturing sites.

Management Approach

Birla Cellulose has a holistic approach towards sustainable manufacturing of MMCF applying the right blend of **best-in-class technology, global benchmark management practices along with the highly skilled and trained team to deliver fibre of the highest quality in a safe and environment-friendly manner.**

Both pulp and fibre sites have reduced consumption of raw materials, energy & steam, water usage and waste generation year on year, by continually innovating and redesigning the process. This not only makes our plants more efficient but also helps the economics of the process, making our products more competitive.



The process water consumption at many of our fibre plants is 30% to 40% less than that of even lower limit of EU BAT norms. Projects of high efficiency have been implemented in the past and new initiatives are under implementation for reducing water consumption. Continuous focus on improving energy efficiency, minimising air emissions (sulphur-to-air) and wastewater across business is underway to the best extent possible based on the latest technologies. The focus is abatement at the source to reduce the impact of our operations on the environment and move towards tighter closed-loop manufacturing.

All the pulp and fibre manufacturing sites comply with ISO 14001:2015 Environment Management Standard (EMS).





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Sustainable Pulp & Fibre Manufacturing

Sustainably sourced wood is a natural and renewable raw material for dissolving wood pulp manufacturing, which in turn is converted to MMCF that has multiple applications in textile and nonwovens. In the entire manufacturing process of pulp and viscose/modal/lyocell, the molecular structure of cellulose in the fibres remain the same as in the original structure of cellulose in its natural form (wood). The resultant fibres, therefore, are nearly 99.9% pure cellulose. Both pulp and fibre manufacturing processes are explained below.



During the cooking process, hemicellulose and lignin are dissolved in water and are separated. Further, the hemicellulose is fermented and distilled to bioethanol, and the lignin is converted to lignosulfonates, which is dried and packed. The cooking chemicals are recycled back. The black liquor/red liquor and pre-hydrosylate liquor generated during the cooking process are burnt in recovery boilers to produce steam and electricity and to generate biogas respectively. The biogas is used in kilns replacing furnace oil, a fossil fuel.

80-90% of cooking chemicals are also recovered in the pulp manufacturing process as well as a significant amount of water is recovered which are reused in the process.



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CASE STUDY

Reducing GHG Emission by Enhancing Biogas Generation & Reducing Furnace Oil Consumption



Harihar Polyfibers, a unit of Grasim Industries Ltd. commissioned in 1972, produces dissolving wood pulp for the manufacture of Viscose Staple Fibre. The mill has the distinction of achieving high chemical recovery efficiency, almost self-sufficiency in energy with implementation of technologies. The mill with its systematic approach, improved the biogas generation in a short time after long stoppage of plant.

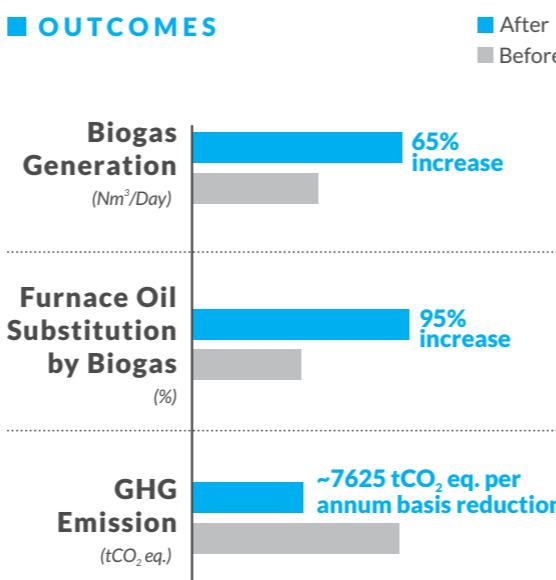
■ CHALLENGES

- High Furnace Oil consumption in lime kiln for lime production due to low biogas generation
- Biogas generation was reduced due to long stoppage and subsequently more time for stabilisation was needed

■ ACTIONS

- Carried out detailed study of biogas process to identify the deviation which is impacting the biogas generation. Contacted process consultants who had experience in the field of nutrients behaviour.
- Conducted several lab scale trials for pre-hydrolysate liquor and lime mixing based on laboratory scale trial neutralisation system modified in plant. Powder form hydrated lime replaced with stone form quick lime.

■ OUTCOMES



Viscose Fibre Manufacturing Process

The dissolving wood pulp here becomes the main raw material, which is soaked in a caustic soda solution. This operation is called pulp steeping, carried out to swell the pulp, and the output is called alkali-cellulose. The alkali-cellulose is shredded into finely divided, fluffy particles called 'crumbs'. The alkali-cellulose is then aged under controlled conditions of time and temperature to depolymerise the cellulose.

Next, in the **xanthation stage**, the depolymerised alkali-cellulose is reacted with carbon disulphide under vacuum condition to form cellulose xanthate. Further, this xanthate is dissolved in dilute sodium hydroxide to obtain a honey coloured viscous solution called 'viscose'. This viscous solution is then ripened, filtered and deaerated before sending it to a spinning machine for further processing.

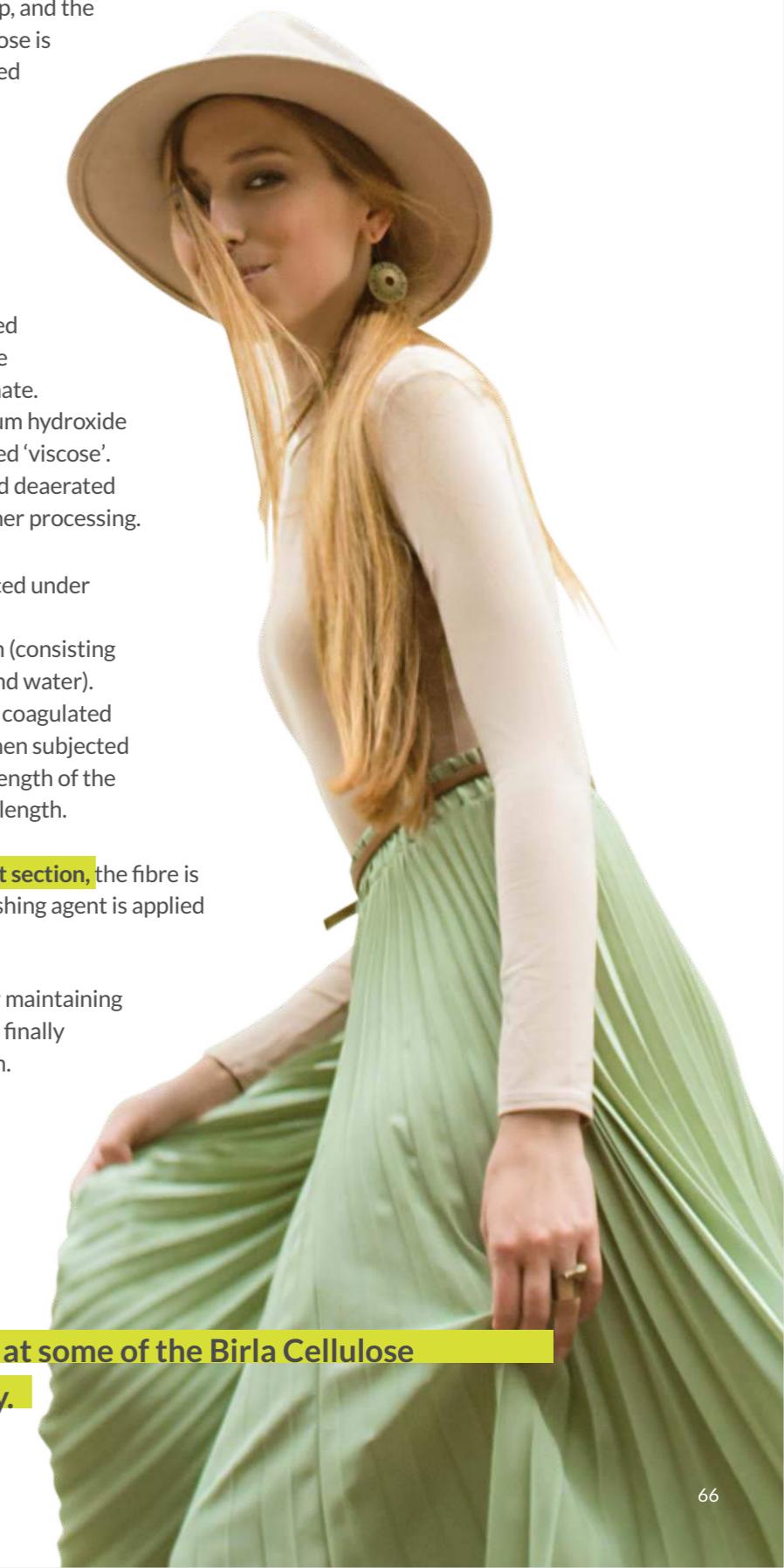
During the **spinning process**, the solution is forced under pressure through spinnerets immersed in a coagulating/regenerating bath called a spin bath (consisting sulphuric acid, sodium sulphate, zinc sulphate and water). Emerging viscose filaments from spinnerets are coagulated and regenerated into fine filaments which are then subjected to stretching to orient the molecules along the length of the fibre to impart strength and then cut to desired length.

In the next stage which is called **after-treatment section**, the fibre is neutralised, washed and bleached. Finally, a finishing agent is applied to provide gloss and lustre to the fibre.

The treated fibre is then passed through a dryer maintaining a desired moisture % range within the fibre, and finally sent to the **baling press** for packing and dispatch.

Sodium Sulphate (Na_2SO_4), which is generated due to the reaction in the spin bath is recovered as a co-product and sold to other industries like glass, detergents, paper, textiles etc.

The recovery of Sodium Sulphate at some of the Birla Cellulose sites is among the highest globally.





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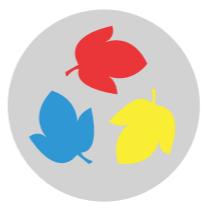


Birla Modal™

Modal Fibre Process Description

All the basic ingredients in Modal process/fibres are the same as in viscose process. There is a difference in process conditions including those for dope preparation and regeneration that results in improved tensile properties for Modal fibre.

These process conditions enable higher degree of stretching post spinning that lead to higher orientation of cellulose molecules, resulting in higher wet modulus as compared to standard viscose fibres.

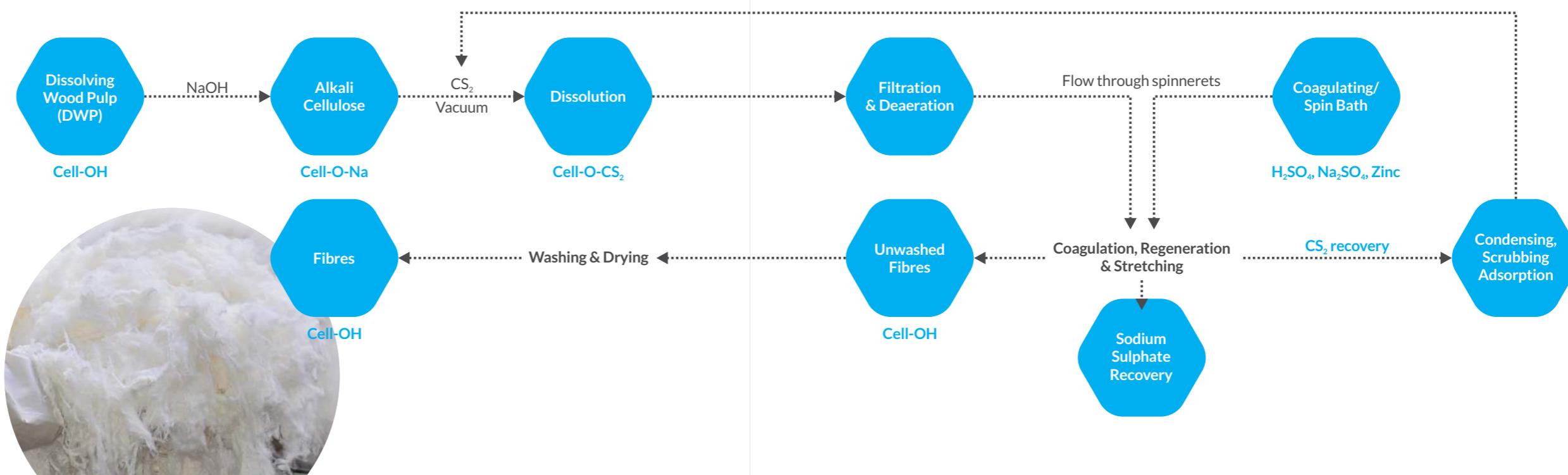


Birla Spunshades™

Spun-dyed Fibre Process Description

The basic fibre of spun-dyed is same as standard viscose fibre. Spun-dyed fibres as the name indicates are coloured/dope-dyed viscose fibres wherein the pigment for dyeing is injected into the viscose solution prior to spinning stage of the viscose staple fibre. Pigments added to viscose dope during the manufacturing process, remain inside the structure of the fibre or in the fibre matrix and not on the surface.

This technology enables considerable savings in resources such as water, energy and chemicals as it eliminates the conventional dyeing process in the downstream value chain, thereby lowering environmental impacts.





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Birla Viscose™

Closing the Loop in Viscose/Modal Fibre Manufacturing

One of the major concerns in the viscose process is the use of carbon disulphide (CS_2) and its associated hazards. The main objective of closed-loop process is to maximise the recovery of CS_2 released through exhaust gases in the viscose production process and reusing it back in the process. This not only reduces air emission, improves working ambience but also cuts down raw material consumption with a positive impact on process economics.

With closed-loop production, the released CS_2 during fibre regeneration is recovered by condensation and adsorption method. Also, the hydrogen sulphide (H_2S) formed during the process is converted to elemental sulphur, which is again reused in the acid plant to produce sulphuric acid (H_2SO_4). This H_2SO_4 is again re-used to prepare spin bath solution.

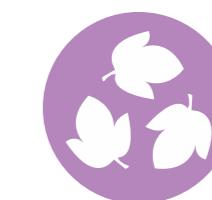
With these systems and developments, it is possible to recover and reuse CS_2 by more than 90% and reduce reliance on fresh CS_2 which in turn will reduce the raw material required for making CS_2 and contribute to effective chemical management and circular economy principles.

CURRENT STATUS

Currently, our sites in China and Thailand are meeting the stringent EU BAT norms including sulphur-to-air emission (20 kg per ton of fibre), COD and zinc emission limits.

WAY FORWARD

We plan to implement closed-loop technologies at remaining fibre sites by the end of the year 2022 to achieve the EU BAT norms and we are implementing a capex of \$170 million for this.



Birla Excel™

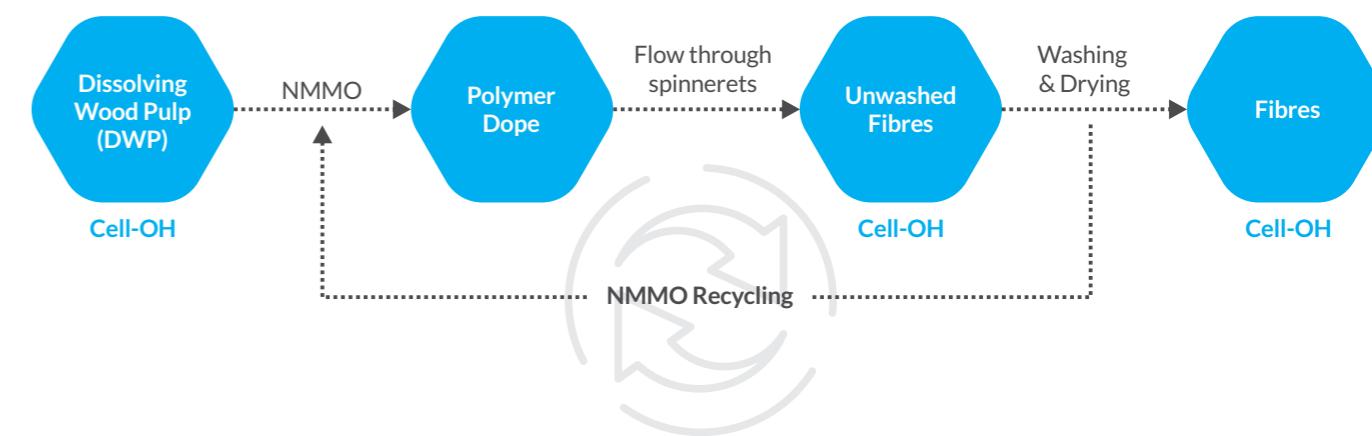
Lyocell Fibre Manufacturing Process

Lyocell fibre is produced by solvent spinning process which is entirely different from the viscose/modal process.

The raw material for lyocell fibre is also dissolving grade pulp as in viscose/modal. What sets this process apart from the classic viscose process is the direct dissolution of cellulose or pulp in an organic solvent called N-Methyl Morpholine N-Oxide (NMNO) without use of any other chemicals/solvents and hence there are no gaseous emissions from the process.

Lyocell technology is a closed-loop technology with an exceptional recovery rate of NMNO of more than 99.7%. The recovered water from the process is reused and a very small quantity of wastewater is being generated in the process.

In the after-treatment section, fibre is neutralised, washed and bleached, and a finishing agent is applied. Fibres are then dried, sent to baling press for packing and finally are ready for dispatch.





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CASE STUDY

Sustaining Wood Availability Balance - Localisation of Wood Sourcing



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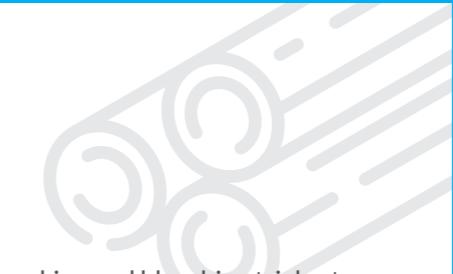
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ACTIONS

- Conducted a series of cooking and bleaching trials at MoRe Research Laboratory, Sweden, to recognise the impact on process, yield and pulp quality
- Modified the configuration of cooking plant at AV Nackawic mill to suit softwood species in designated digesters, further washing/screening operations adjusted to achieve uniform blend of hardwood (85%) and softwood (15%) cooked pulp and facilitate effective screening of longer softwood fibres. The bleaching parameters were fine-tuned to achieve final pulp viscosity and whiteness as per customer specs
- Conducted a controlled trial for 3 days with constant coordination between mill operational and technical teams. All stakeholders including customers were kept in loop along the execution of mill trial

OUTCOMES

- 15% of softwood blended pulp produced during the trial is currently being tested at Fibre Research Centre (FRC), Kharach. Based on feedback from FRC and viscose fibre customers, AV Nackawic mill will consider regularising softwood mix
- Deduced that 15% softwood could be used without having any impact on final pulp quality, yield and mill productivity

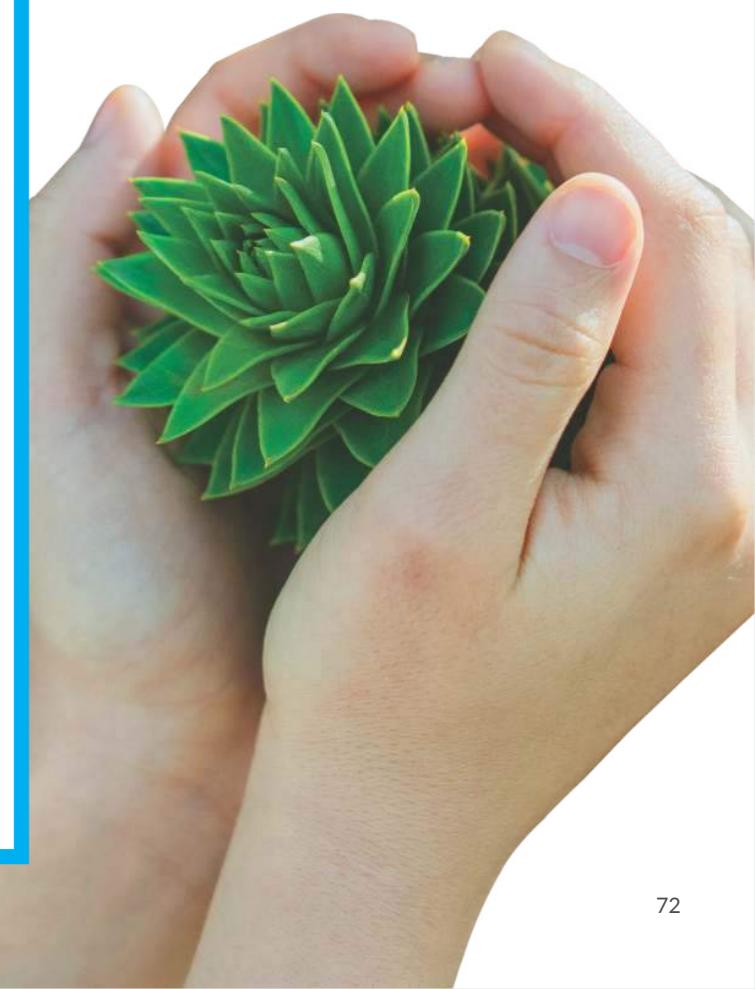
- By substituting 15% hardwood by softwood, the GHG emission associated with logs transportation is expected to reduce by about 1,335 MT CO₂eq. per year
- Having a blended softwood and hardwood pulp from AV Nackawic will allow the Group VSF customers to realise the benefits of softwood fibre without the need to blend with other softwood pulps
- From a sustainability point of view, this trial is a major milestone and an achievement indeed towards positioning the AV Nackawic mill for securing sustainable wood

Setting a New Benchmark in Environmental Performance

Resource conservation is a priority for Birla Cellulose and to continually reduce ecological footprint in our value chain. We have been taking several initiatives to reduce our impact on the environment setting an example for the MMCF industry.

Our emphasis is on 'abatement at source' to reduce the consumption of resources because as the business expands, it becomes inevitable to conserve naturally occurring resources.

In past years, our efforts have been to strengthen the closed-loop process and bring in the Best Available Technologies to improve our process efficiency and, recover and reuse the waste and by-products generated in the manufacturing process.



AV Nackawic mill in Canada has been producing dissolving pulp using hardwood over many years. With limited hardwood availability around the Nackawic area, continuing the production from 100% hardwood has resulted in the Nackawic mill sourcing about 15% of its hardwood from long distant suppliers with an additional transportation of about 300 km and also at significantly higher prices compared to average supplies. To sustain the balance of wood availability at competitive pricing, it was essential to explore equivalent quantity of softwood as a substitute for hardwood in pulping process. Currently, the Group VSF customers, other than for Modal production, are blending softwood from other suppliers such as AV Cell, Domsjö etc., to realise higher tenacity from longer softwood fibres.

CHALLENGES

- AV Nackawic mill never used softwood species since its conversion to dissolving grade pulp in 2008 and had no experience of softwood cooking process techniques
- Higher lignin content in softwood as compared to hardwood posing uncertainty over the final product quality (pulp viscosity and whiteness parameters)
- Ambiguity about impact on productivity due to longer cooking time of softwood



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CASE STUDY

Reducing Caustic Consumption in Fibre Manufacturing



Caustic soda plays an important role in the production of viscose fibre. It reacts with dissolving wood pulp to aid further reaction with other chemicals.

Nearly 35-40% of consumption is contributed by caustic soda as compared to other chemicals. Reducing caustic consumption has always remained in Birla Cellulose's priority list. It is also aligned our goal of contributing to the SDG 12 - Responsible Consumption & Production.

CHALLENGES

Increased viscose fibre production sees increased caustic soda requirement. Our overall caustic consumption in all the units was as high as 500-550 kg per ton of fibre in FY16.

We committed to achieve EU BAT standard norms and ZDHC MMCF Guidelines for consumption.

ACTIONS

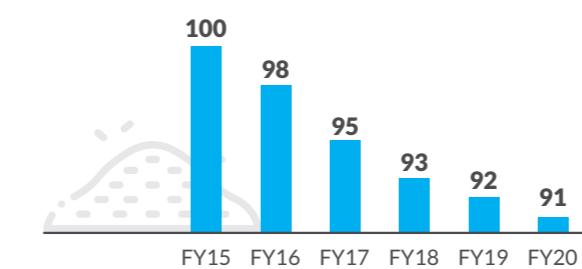
- Revisited viscose making process conditions with uniform slurry consistency and avoided wet patches in the alkali cellulose
- Rationalised the recipe of mix charge lye alkalinity in cellulose xanthation stage
- Modified processes in a phased manner without affecting the process parameters and product quality
- Controlled caustic losses using mechanical seals in pumps
- Monitored and enhanced hygiene
- Resolved metering error both in quantity and concentration

OUTCOMES

- Consequently, caustic consumption across all fibre sites reduced ranging by 4% - 8% in the last 5 years
- The site at China first achieved the feat of lowest caustic consumption, and then swiftly replicated at rest of the fibre manufacturing sites
- Achieved new benchmark in caustic consumption, and moving towards the lower limit set by EU BAT

Caustic Consumption (Fibre Sites)

Index, FY'15 = 100



Water Management

Water is becoming increasingly scarce because of climate change and there is an increased exploitation of existing reserves. Considering the higher level of agricultural and industrial activities needed to support the growing population, it is critical to focus on efficient management of water sources.

Protecting and conserving water resources through excellent water management practices and governance systems are a priority for our business

and is integral to our commitment towards water stewardship.



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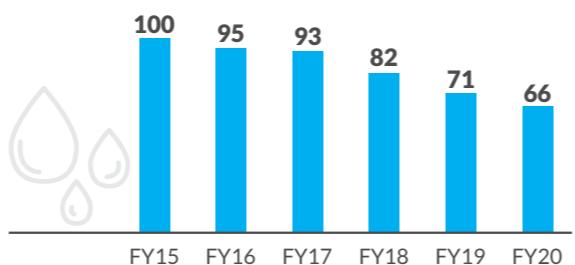
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The success of our operations is acutely tied with accessibility to water since it impacts the life cycle of our business. We use water responsibly with equitable sharing by end users, respecting the diversity of needs.

Birla Cellulose applied the 4R Principles (reduce, reuse, recycle and regenerate) in its operations for closing the loop on water, resulting in several technological breakthroughs and a significant reduction in water consumption.

Water Consumption (Fibre Sites)

Index, FY'15 = 100



Birla Cellulose's sites spearheaded innovation in closed-loop technologies for water, and these were widely adopted by all its viscose fibre manufacturing sites.



CASE STUDY

Innovation Through Zero Liquid Discharge (ZLD)



Scarcity of water has always been a matter of concern for our Grasim Nagda Unit since the beginning. But after overcoming several hurdles, the project to install the 4R - Reduce, Reuse, Recycle and Regenerate system is well underway. Grasim Nagda Unit is working on a ZLD project and expects to commission by 2021.

ACTIONS

- Invited water field experts to design the systems retrofitting several places for smooth operation of the ZLD process
- Involved world's top three companies in membrane technologies to develop an ideal system that can handle all the nuances of viscose effluent
- After months of study and analysis, a state-of-the-art ZLD system was designed which will recover about 95% of wastewater feed without any generation of any waste

CHALLENGES

- ZLD system has never been tried in the viscose process
- High inorganic, organic content and hardness in the effluent
- Unit not designed for installing ZLD system
- Increasing water stress and commitment to reduce fresh water consumption

ANTICIPATED OUTCOMES

- As 95% wastewater is recycled within the process, fresh surface water withdrawal from river will be avoided leading more availability of water for irrigation and other general purposes
- Increase in salt recovery leading to increased revenue generation
- Positive impact on the society at large
- No effluent discharge from the site and zero pollution load due to wastewater



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Birla Cellulose aims to reduce its process water consumption in VSF manufacturing by 50% by the year 2025. By end of FY20, it has reduced its process water consumption by 34% over the baseline of FY15.

Aligning with UN SDG 6 and SDG 12, Birla Cellulose is committed to reduce water consumption and thereby improve the water availability for people at large and the planet.

6 CLEAN WATER AND SANITATION



12 RESPONSIBLE CONSUMPTION AND PRODUCTION



Adopting Most Stringent Wastewater Norms

Untreated wastewater discharge impacts both human and environment. Birla Cellulose strives to ensure that wastewater is discharged by applying most stringent global norms and going beyond the regulatory requirements, and is adopting EU BAT BREFs and ZDHC MMCF Guidelines at all its fibre manufacturing sites. It has put up state-of-the-art Effluent Treatment Plants (ETP) with the latest technology at each of its manufacturing sites. The quality of treated wastewater discharge meets the local regulatory norms. COD load in effluent has reduced by nearly 25% in fibre sites over FY18.

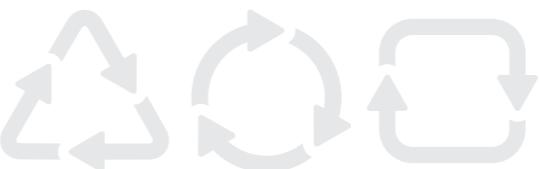


Waste Management

Sustainable management of waste needs to be appropriately planned and effectively implemented to ensure that the wastes generated from operations pose no adverse impact on human and environment health.

At Birla Cellulose, we follow a waste management hierarchy which represents the most preferred options for dealing with the waste to limit disposal as far as possible.

All the sites follow the local waste management rules for disposal and classification as applicable in their country of operations. In waste management, we follow circular economy principles i.e. using the waste for another process or another industry.

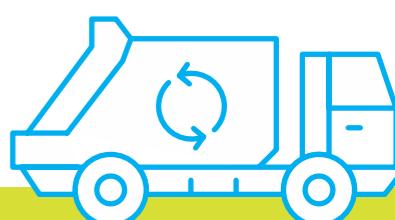


Most of the waste generated at our sites is either recycled/reused/recovered and hence, least amount of waste goes to landfill.



The hazardous waste generated at our units is either supplied to authorised recyclers, disposed through Treatment Storage and Disposal Facilities, or supplied to other industries as raw material.

Fly ash, a by-product from coal-fired power stations, is sent to our Group's cement sites to be used as clinker replacement. As a result, fly ash, which is a waste for viscose business, is used as a raw material in cement plants and reduces the amount of natural resources required, as well as GHG emissions and a very apt example of circular economy.



Waste is used in several applications, for example, gypsum sludge is used as a raw material for cement and organic sludge is used as a fuel for energy generation.



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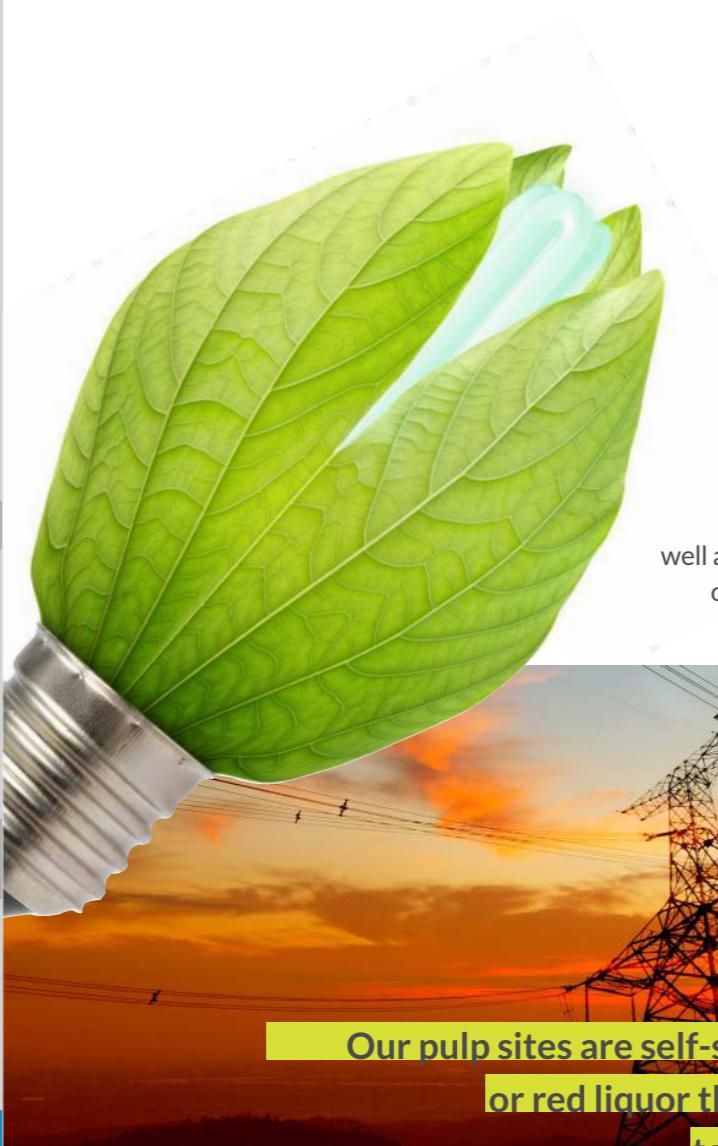
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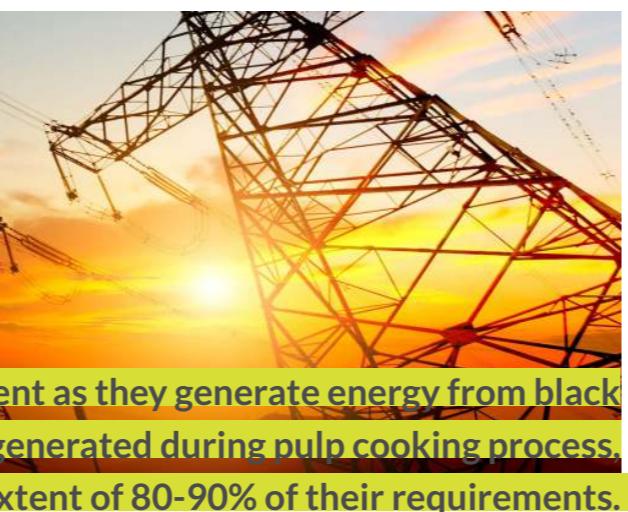
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The management of energy consumption and carbon emissions are important issues affecting our operations. Both are interrelated because generation and usage of energy from fossil fuel sources is a major source of greenhouse gas emissions.

Viscose fibre production is an energy intensive process.

Currently, we utilise both the types of energies - renewable as well as non-renewable in our operations, and non-renewable sources of energy contribute to CO₂ emissions leading to climate change.



Our pulp sites are self-sufficient as they generate energy from black or red liquor that is generated during pulp cooking process, to the extent of 80-90% of their requirements.

We currently monitor Scope 1 and Scope 2 GHG emissions. Scope 1 GHG emissions includes emissions due to usage of primary fuels and Scope 2 GHG emissions are mainly from the purchased electricity. The carbon sequestered by the forests managed directly by Birla Cellulose (3.44 million tons) is more than the entire Scope 1 & 2 emissions of all pulp and fibre manufacturing sites (3.22 million tons) resulting in net negative GHG emissions (-0.22 million tons) as per the evaluation done in FY19.

Scope 3 GHG emissions (due to various activities beyond the boundaries of our control) and carbon sequestration from our own managed forests data for period of FY19 has been mapped for all our DWP & VSF sites.



Reduction in energy intensity



Increase in the use of renewable energy



Net positive growth of forests to sequester carbon emissions



Use of non-fossil fuel based sources and biogas as energy source at all the fibre sites

Energy & GHG

Minimising Emissions to Air

Air emissions, if not managed, can have significant adverse effects on those in the vicinity and further away depending upon the location and height of the emission source/s as well as meteorological conditions, which govern the dispersion of pollutants.

Birla Cellulose is committed to keeping its emission within permissible limits, as well as finding innovative solutions to reduce them and adapt global best practices and benchmarks (EU BAT Standard).

The fibre sites have various technologies to collect and treat the CS₂ and H₂S emissions from the processes. These include condensation of CS₂, wet sulfuric acid processes, carbon disulphide adsorption technology (CAP), redox process and scrubbers etc.



We have continuous online monitoring system (CEMS) for both ambient air and stack emissions, at most of the sites for emissions monitoring which are connected to pollution control board servers. Real time emission data of important parameters are displayed at the factory gate of fibre manufacturing sites to improve the transparency of environmental performance for surrounding communities and public domain.



Birla Cellulose
Fibres from nature

CASE STUDY

Progress on Adoption of EU BAT Roadmap at Birla Cellulose

The closed-loop technologies are setting new benchmarks in resource efficiency, creating a safe work environment, and achieving safe limits set by World Health Organisation (WHO) and Occupational Health & Safety Assessment Series (OSHAS).

CHALLENGES

- During the regeneration of cellulose in viscose process, liberated CS₂ is recovered through condensing system and part of it gets converted to H₂S in diluted form. This H₂S is exhausted through the chimney. The challenge was to restrict this emission by improving recovery
- Endeavor to achieve stringent EU BAT standard norms and ZDHC MMCF Guidelines

ACTIONS

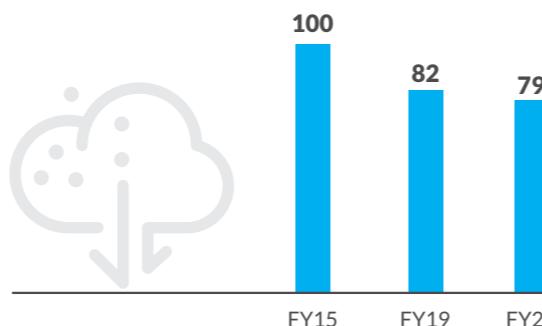
- Installed the closed-loop technologies in the CS₂ and H₂S emission routes and developed a state-of-the-art technology at our unit at Thailand, Thai Rayon Public Co. Ltd. (TRC) to recover elemental sulphur.
- Implemented Carbon Adsorption Process (CAP) in addition to condensing system for recovering CS₂ from the exhaust gas.
- Set up a sulphur and CS₂ recovery project based on the TRC experience at BJFCL-China Unit in July 2019
- Installed Wet Sulphuric Acid (WSA) technology at PT Indo Bharat Rayon, Indonesia
- COD and zinc reduction plans are progressing well at all fibre sites with stringent monitoring of wastewater parameters

OUTCOME

- A considerable amount of reduction in the emission of H₂S and CS₂ is observed
- TRC & BJFCL sites operating below consumption level of CS₂ specified in the EU BAT and meeting sulphur-to-air emission norms
- The CS₂ recovery will be in the range of 90-95% compared to conventional systems where the recovery is 45-50%.
- In wastewater parameters, few sites have achieved EU BAT level of performance with overall reduction in COD by nearly 25% in last 3 years & zinc by 40% in last 2 years. Remaining sites to achieve COD & zinc norms by 2022.

Sulphur-to-air emission

Index, FY'15 = 100



WAY FORWARD

GCD, Vilayat (India) site will meet the EU BAT norms by May 2021. For Birla Cellulosic, Kharach (India) & PT Indo Bharat Rayon (Indonesia), engineering work has been completed and equipment ordering is in process. Engineering work is in progress at Grasim Harihar and Nagda sites in India.

Awards

Birla Cellulose has won the 'Golden Peacock Global Award for Sustainability 2020' based on its global leadership and achievements in ESG performance



Our site in Harihar - Grasilene Division - has been bestowed with the CII-ITC Sustainability Award 2019 for Excellence in Environment Management.

Harihar Polyfibers (DWP site) receives 'Commendation for Significant Achievement' in Environment Excellence Category of CII-ITC Award.

In line with our commitment to promote green and sustainable development, Birla Cellulose's facility 'Birla Jingwei Fibres Co. Ltd., China' (BJFCL) has passed the clean production acceptance check by Fancheng District Sub-office of Xiangyang City Ecology and Environment Bureau, reaching Clean Production Level I.

Thai Rayon's SIL plant received "Green Industry Award" by Ministry of Industry for environmental management and for continuous improvement & development.

Adapting Globally Recognised Standards and Systems

Birla Cellulose has adopted standards and systems accepted and recognised globally. EU BAT, ZDHC, Higg (3.0) FEM are some of the examples of such systems to make our process more environmentally friendly and reporting transparently.



EU BAT (BEST AVAILABLE TECHNIQUES)

'Reference Document on Best Available Techniques in the Production of Polymers' has provided the BAT for the production of viscose fibres.

Birla Cellulose has adopted EU BAT for its fibre manufacturing facilities and has an aim to comply with it by the year 2022 for all the sites.

As mentioned earlier, our sites in China and Thailand already comply with these norms.

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HIGG FEM

Birla Cellulose started its self-assessment journey several years back and has verified benchmarked scores in Higg FEM 3.0 for 2019. To achieve higher scores than previous years, the sites need to demonstrate year-on-year improvement in the performance in the areas of **environment management, energy & GHG, water use, wastewater, emissions to air, waste management, and chemical management.**



ASSESSMENT SITES COVERED

7	Higg (3.0) FEM 2019
7	Higg (3.0) FEM 2018
4	Higg (3.0) FEM 2017
4	Higg (2.0) FEM 2016

3rd PARTY VERIFIED SCORES

Higg (3.0) FEM 2019	92
Higg (3.0) FEM 2018	90
Higg (3.0) FEM 2017	80
Higg (2.0) FEM 2016	77



ZDHC MMCF GUIDELINES



CONTRIBUTOR

In the last few years, MMCF has become an increasingly vital fibre category and has grown largely due to its sustainability profile. There were no comprehensive norms for air emissions, wastewater discharge and consumption norm for MMCF. Multi-stakeholder task force under the administration, Zero Discharge Hazardous Chemicals (ZDHC) took up the task of forming comprehensive production and emission guidelines for the MMCF industry.



Birla Cellulose, being a member of ZDHC has contributed along with other MMCF players, in formulating the guidelines for MMCF.



After 2 years of extensive consultations and research, ZDHC released MMCF Responsible Fibre Production, Wastewater & Air Emission Guidelines. The guidelines give unified criteria for measuring output indicators with a 3-level approach namely Foundational, Progressive and Aspirational. Birla Cellulose is committed to apply ZDHC MMCF Guidelines at all its fibre manufacturing sites. MMCF producers are required to meet foundational wastewater target by 2021 and air emission target by 2022. Birla Cellulose has completed the wastewater testing as per the recently published ZDHC MMCF Wastewater Guidelines and the results have been posted in ZDHC Gateway. All the sites have met foundational or above level.



GOING BEYOND LEGAL COMPLIANCE

Good compliance practices drive sustainable business. We have implemented a compliance program via an 'IT-enabled legal compliance management tool' (e.g. Enhesa legal questionnaires hosted on Enablon).

Our compliance and assurance programme is designed to ensure that we meet the requirements of local laws and regulations. The programme is cost effective because it is only when a high level of compliance and conformance is reported by the site validators that the Group's Assurance Experts visit that site to provide an integrity check in line with our Group's values. Any concerns during the assessment are dealt on priority in consultation with Subject Matter Experts (SMEs).

The manufacturing sites are classified based on the scores obtained through the assessment and legal questionnaire and are required to maintain full legal compliance at all times. This is tracked and monitored through the Enhesa system on a monthly basis and the compliance reports are shared with the top management and governance team of Birla Cellulose.

Any new legal requirement gets introduced, the same gets added into the Enhesa system and the system sends the message to the person responsible and the site validator.



SELF-ASSESSMENT QUESTIONNAIRE (SAQs) TO ENSURE CONFORMANCE TO INTERNATIONAL STANDARDS

The Aditya Birla Group Sustainable Business Framework has been assured by an internationally renowned independent third party to ensure that it conforms to the various international standards that are incorporated into it and going beyond the regulatory norms.

To assist with this process, ABG has developed a scoring methodology and heat map score system to gauge and monitor site performance against the Standards and an action plan is developed to ensure improvements.

The self-assessment mechanism places responsibility on site managers to engage with our standards and to drive the changes required to place the operations on a sustainable path.

By adopting an evidence-based approach, we are ensuring rigour and consistency in our processes. Sites have to provide evidence in the form of reports, photographs, documents and registers etc. Those sites that fall under Tier 1 and 2 (more than 80%) are reviewed off-site, and an on-site audit is carried if off-site review score is => 95%



Today, all the sites are operating at >95% conformance in Birla Cellulose, reflecting the high importance given to the implementation of global best practices as well as meeting the applicable local and international regulations.



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Quality Management

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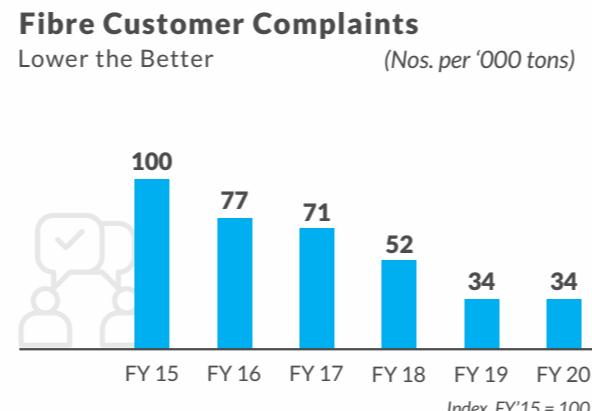
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Birla Cellulose is the industry leader in high quality MMCFs in the global market and this is the result of our continuous zeal to supply the highest quality fibres across our range of products.

Quality of our products and processes is a collective responsibility owned by employees at Birla Cellulose and this starts right from procurement of high quality raw material to manufacturing a sustainable product.

Dual mechanism is applied for quality control. Firstly, the conventional quality assurance systems as physical testing of raw materials and products at every stage ensures right quality at every stage.

Secondly, digitally enabled system of 'Product-by-Process' ensures that the product that is produced is validated on a real-time basis and based on the critical operational parameters of which the finished product quality can be assured. This intelligent system (First Pass Yield) acts as a preventive and predictive operator tool which can guide the site team to take corrective action for any deviations.



Critical process parameters are identified for each process step and aim values and maximum limits of deviation from aim are defined as per the equipment design, variation in raw material and control systems being used. The data is systematically analysed and used to develop process design improvements and new control techniques, which reduce the process variations. This has resulted in significant improvement in product quality and production of the off-grade material at all the units have reduced significantly.

GRI Indicators

The tables below exhibits all the key indicators such as water, energy, emissions, waste with respect to the manufacturing of MMCF such as viscose, modal & excel (lyocell).

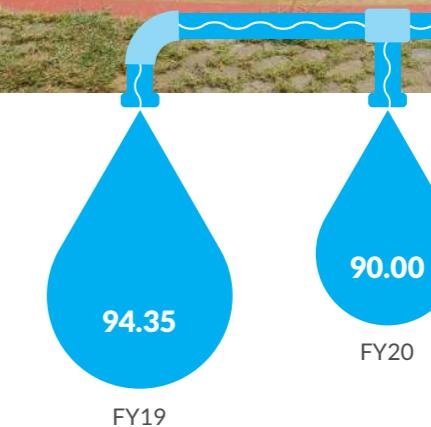
Water Withdrawal & Effluent Discharge

The water withdrawal and effluent discharge in pulp and fibre manufacturing for the last 2 years is given in below table.

	FY 2018-19	FY 2019-20
Surface Water	136.92	128.52
Ground Water	0	0
Waste Water from Other Organisations	0.23	0.25
Water from Municipality / Water Utility	9.66	9.30
Total Water Withdrawn	146.82	138.07
Treated Wastewater Discharge	125.99	119.84
Quantity of Effluent Recycled/Reused	-	12.97



Fresh Water Intensity including pulp & fibre
(m³ per Ton of Product)





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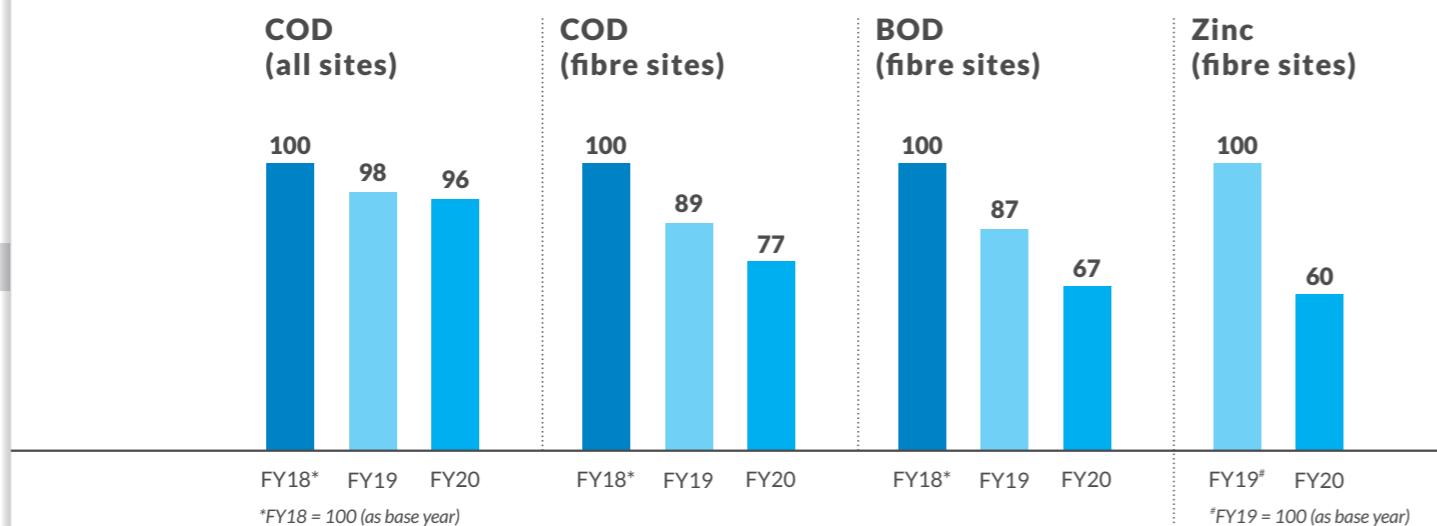
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The quality of effluent discharged has been summarised herein.

We have undertaken a progressive initiative of reducing COD and zinc in the wastewater discharge.



Waste Disposal

The details of the waste (in MT) generated by type and disposal method is summarised in the table below for the reporting year.

MT

Disposal Methods	Hazardous Waste		Non-hazardous Waste	
	FY 2018-19	FY 2019-20	FY 2018-19	FY 2019-20
Recovery	23,066	25,216	1,41,642	1,61,690
Reuse	9,494	12,615	1,75,626	2,22,092
Recycling	6,379	6,469	10,363	6,685
Incineration	63,313	43,681	3,050	2,372
Landfill	30,657	10,110	23,277	28,434
Composting	0	0	3,500	46,500
Total	1,32,910	98,090	3,57,457	4,67,772

Energy Consumption

million GJ

	FY 2018-19	FY 2019-20
Non-renewable Energy	34.93	36.05
Renewable Energy	19.03	21.11
Total	53.96	57.16

GHG Emission

million MT

	FY 2018-19	FY 2019-20
Scope I Emission (direct emissions)	2.99	3.07
Scope II Emission (indirect emissions)	0.16	0.17
Total GHG Emissions (CO ₂ e)	3.15	3.25
Carbon Sequestered	3.44	-

We had evaluated carbon sequestration due to our managed forests in FY19. This exercise was not repeated in FY20, as we do not expect any significant change within one year. Please refer to section on Energy and GHG for further details.

Significant Air Emissions

	FY 2018-19	FY 2019-20
SO ₂ emissions (all sites)	100	103

FY19 = 100 (as base year)



Mr. H. K. Agarwal
Business Head &
COO Global
Fibre Manufacturing

Q On the water stewardship front, how is the performance of fibre manufacturing facilities?

Water, being the most critically regarded resource across the entire world today, puts the great onus on all the nations and industry sectors to look into their water usage practices. Adopting 4R Principle (Reduce, Reuse, Recycle, Recover), we have taken several major initiatives, plant-level operational modifications and system improvement in our VSF manufacturing with stringent monitoring and reviewing mechanism.

On the water intensity front all our fibre plants are meeting EU BAT standard norms making us an industry leader. To move further, we have set an ambitious target of a 50% reduction by 2025.

To supplement this, we have the ZLD project already in progress at our Grasim Nagda plant, which will reduce the dependency on surface water supply by about 95% and expecting to commission the project by 2021. This will be a unique project and first time ever in the VSF industry globally, considering the high hydraulic load being handled. All these measures are contributing towards the water stewardship.



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Sustainable Products

- Livaeco volumes grew more than 5 times in the year
- Newly introduced 'Liva Reviva' made from pre-consumer waste gaining momentum
- Launched eco-enhanced Modal fibre
- 90 patent applications/patents in 16 countries belonging to 52 patent families

Key Challenges 2020-21

- Limited awareness about sustainability credentials of MMCF in value chain
- Scaling-up challenges for NextGen alternate feedstock
- Nascent stage of technology for segregation of cellulose from blended waste for circular products



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Sustainability Credentials

- Based on naturally occurring cellulose from wood, renewable raw material from sustainably managed forests
- No land pollution as insecticides, pesticides and fertilizers are not used in forests
- Forests help in carbon sequestering and thus reducing the impact of climate change
- Land and water requirements are a fraction of other natural fibres such as cotton
- Pre- and post-consumer waste can be converted to fibre again resulting in circular products
- Made using closed-loop system minimising the use of chemicals, water and energy
- Dope-dyed viscose fibres eliminate use of dyes and auxiliary chemicals in downstream process and eliminate wastewater generation

Life Cycle Benefits

- Fully biodegradable, and fastest biodegradability among all types of fibres
- No plastic microfibres generation that pollute marine/aquatic bodies
- Traceable from forest to fashion

Functional Superiorities

- Higher moisture absorption as compared to other fibres
- Soft, lightweight and brilliant lustre
- No unpleasant odours and skin-friendly (no skin irritation)
- Excellent blending ability with other natural and synthetic fibres
- Large range of colours and good drape (fluid fabrics)
- Retains freshness even after repeated washes
- Good wet strength in Modal and Lyocell

Birla Cellulose is operating at the beginning of the long wood-pulp-fibre-fabric-fashion chain and supply the basic constituent, which is the fibre, for textile/nonwovens industry. Birla Cellulose applies sustainable best practices across the value chain including responsibly sourced wood, closed-loop manufacturing process, recycling and reusing raw materials and natural resources and using a circular business model.

We have a dual responsibility of not only making the basic raw material more sustainable but also to enable and empower the upstream supply chain and the downstream value chain to do the same.

More information on the product offerings by Birla Cellulose are available here <https://www.birlacellulose.com/products>



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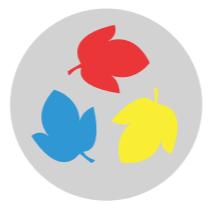
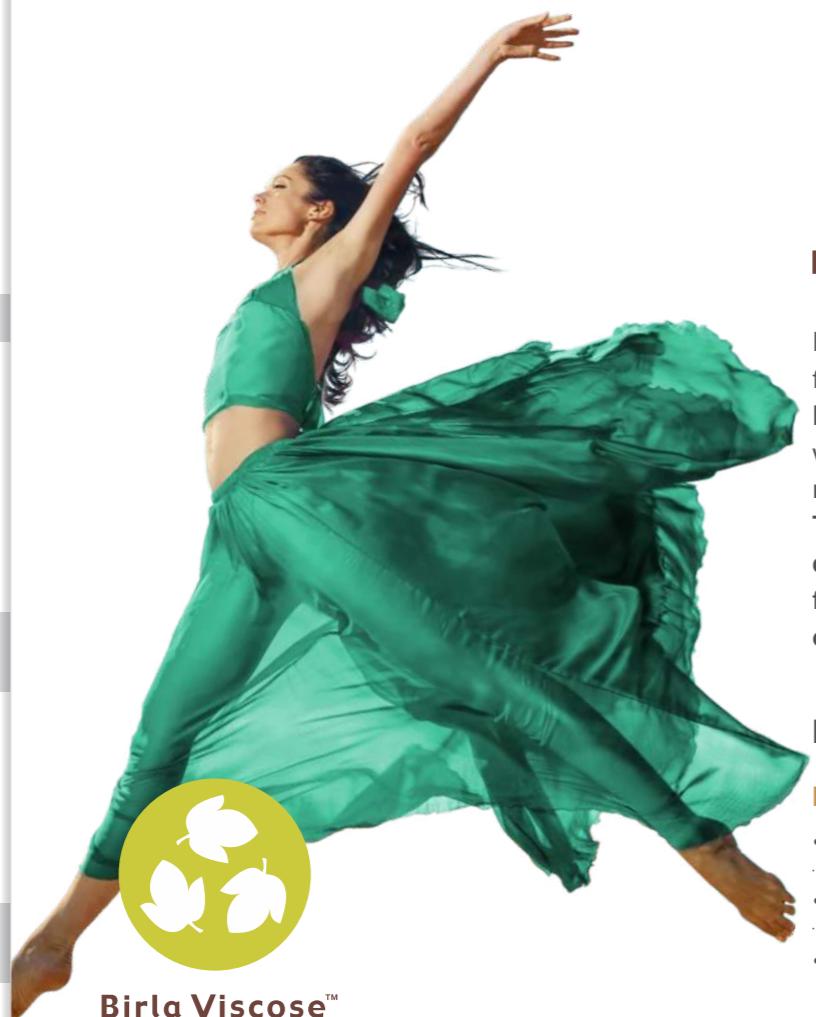
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Sustainable Products Profile



Birla Spunshades™

Birla Spunshades™ are coloured man-made cellulosic fibres where pigments are injected into the viscose dope before the fibre is spun and cut. Birla Spunshades fibres with unique Colour-Lock™ technology make fabric fade-resistant and ensures best in class colour consistency. The spundyed fibre eliminates processes in the downstream value chain such as dyeing step at the fabric stage, saving large amounts of water and chemicals as well as no wastewater generation.

Benefits of Spunshades

For Value Chain

- Uniformity across and within lots
- Saves water in downstream process
- Lower wet processing cost, energy cost, chemical cost

For End Consumer

- Colour fastness even after repeated washes
- Eco-friendly and sustainable
- STANDARD 100 by OEKO-TEX® certified, safe for baby skin



Advantages of using Birla Viscose™

- Made from sustainably sourced wood and using closed-loop technologies
- High tenacity, high whiteness and excellent dye-ability
- Suitable for advance spinning systems
- STANDARD 100 by OEKO-TEX® certified meeting ecological requirements
- Certified for biodegradability and compostability by TUV AB



Birla Modal is the second generation in man-made cellulosic fibres that combines aesthetics and elegance with performance, with a host of consumer and value chain benefits.



Birla Modal™

Brilliant Colours and Unmatched Lustre

Birla Modal takes up colour uniformly, deeply and fast thereby bringing out the natural brilliance

Dimensional Stability

Textile made from Birla Modal display high dimensional stability due to the morphological structure which imparts excellent elastic properties

Blends Beautifully

Though cotton remains an old favourite blend partner, Birla Modal blends beautifully with almost all textile fibres





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Birla Excel™



Excellent Lustre & High Colour Depth

Due to highly uniform morphological structure of Birla Excel, fabric appearance is luxurious as silk and the colour palette gets enhanced



Fibrillation and Suede Effect

Birla Excel has a fibrillated structure which helps in its unique look, feel and moisture management

Skin Friendly

Birla Excel is a preferred choice for next to skin application due to its smooth surface coupled with high water absorbency and transportation

Wash and Wear Characteristic

Birla Excel has higher strength, unique cross section and structure that makes fabrics to appear fresh even after repeated washes

Unique Drape and Fluidity

Yarn movement relative to each other on account of lateral shrinking of fabric imparts fabric fluidity and drape, best possible only with this fibre

High Dimensional Stability

The compact fibre orientation and low elongation of Birla Excel makes fabric remain stable both for shrinkage and elongation

Birla Purocel is our nonwoven fibre offering which is **nature-based and ideal for personal care, hygiene and medical usage and next-to-skin applications.**



Birla Purocel focusses on sustainability, innovation and partnership, and offers a wide range of fibres for nonwoven applications.

The following are specialty offerings by Birla Purocel apart from regular products for nonwoven customers.

Birla purocel™ | EcoDry

Its unique properties allow the moisture to transfer to the fibre's absorbent core, while keeping the user's skin dry. The fibre is completely free of silicon and fluorinated chemicals. It combines the advantages of Cotton and Polypropylene without compromising on quality and biodegradability to make safer & environment friendly hygiene products with the requisite performance characteristics.



Biodegradable & compostable fibres for sustainable and environment friendly absorbent hygiene products





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**Birla
purocel™**

Quat-Release (QR)

Fibre created for effective cleaning and disinfecting in household and industrial environments

These specialty fibres have been infused with a quat-release technology which enables easy and quick release of quats - quaternary ammonium compounds usually found in quat based deep cleaning disinfectants. The technology helps in higher amount of disinfectant (> 85%) getting transferred to the target surface, thus effectively cleaning hard surfaces of your household and industrial areas.

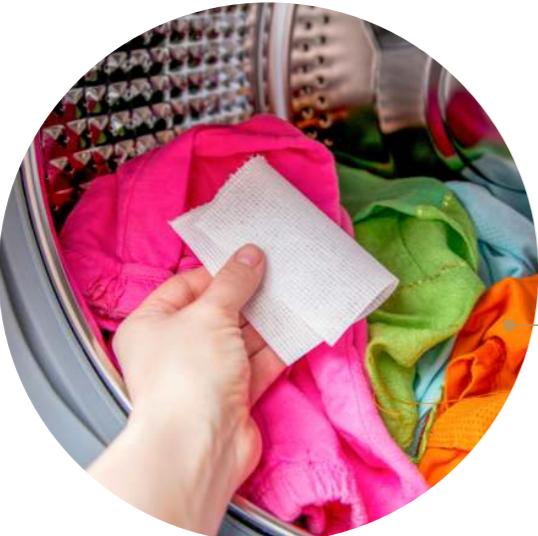
**Birla
purocel™**

Antimicrobial

Antimicrobial is a unique fortified fibre that helps to create nonwovens which restrict microbial growth including viruses and bacteria; and kills them to the extent of 99.9%*



Purocel Antimicrobial is an enhanced fibre with active agents that are bonded to the fibre for fast, effective and long lasting protection against microbial growth including viruses and bacteria*. This specially treated fibre also significantly reduces the step of antibacterial treatment for your product without compromising on its purity, hygiene and performance.



**Birla
purocel™**

Colour Guard

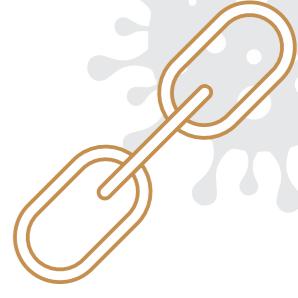
Purocel Colour Guard is a unique fibre having inherent property to ensure protection of clothes from cross-staining resulting from colour bleeding during a machine wash

Purocel Colour Guard when used in washing machine, protects the clothes by scavenging released colors and thus avoiding cross-staining. This specially treated fibre inherently has this property of eliminating the need to do any additional processing without compromising on performance.

Reinventing Nonwoven Supply Chain Amid COVID-19 Pandemic

COVID-19 has not only impacted lives but also disrupted supply chains across the globe. We are proud of the fact that Birla Cellulose is able to de-risk its viscose fibre supply chain on account of having multiple manufacturing locations across the globe and fungibility of its production lines. Along with that, we have developed internal capabilities through which we can easily convert textile grade line to nonwoven grade lines and vice-versa in a very short period of time.

Due to these factors, we were able to ramp up our production capacity by more than 2.5 times to meet the excess demand during COVID-19 and helped Birla Cellulose sail through easily during the pandemic.



Birla Sodium Sulphate

Birla Sodium Sulphate is recovered from the viscose fibre production process as a byproduct. The GHG impact of rayon grade sodium sulphate is very low as compared to conventional as this is environmentally burden free product. We produce different grades of sodium sulphate as per customer requirements - regular, low pH, high whiteness, finer/coarser, PROSODIUM etc.



High quality sodium sulphate is obtained as a byproduct from the state-of-the-art closed-loop production process with an objective to recover natural resources and reduce emissions to the environment.

Traditional industry segments of sodium sulphate applications are detergents, glass, textile processing, dyes & chemicals, pulp & paper, leather and cement industries. Our market share is about 5% globally with India's market share of 60% and about 30% share in Indonesia/Thailand.



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New application development

PROSODIUM™
Rich Source of Sodium for Poultry Feed
— A Quality Product from Grasim Industries Limited —



The product has been certified as

Safe for poultry feed for hens as per toxicology study conducted over a duration of three months

Free of heavy metal contamination

Category 5 product as Globally Harmonized Classification System (GHS) with LD₅₀ range between 2000-5000 mg/Kg by weight

Free of any radioactive contamination

PRODUCT USP



Rich Source of Sodium



Value-for-Money Formulation



Maintains Dietary Electrolyte Balance



Decreases Acid-binding Effect



Lower Ammonia Emission

Product Innovation

Innovation for us is a continuous process and is at the core of our business strategy.



Our global R&D centres continually develop sustainable products and processes, and work collaboratively with technology providers, global research institutions and value chain, to delight customers and for improved sustainability performance.



Innovations in product design have delivered extraordinary products that provide outstanding comfort and feel to the end consumers and with unmatched sustainability credentials.

Development of products with next generation feedstock is high on our agenda and we have developed 'Liva Reviva' with 20% pre-consumer waste and eco-enhanced Livaeco range of products has seen exponential growth with sustainably conscious consumers and brands.

Innovations in technology development has resulted in

Birla Cellulose setting new benchmarks in the raw material consumption, going much lower than the stringent EU BAT consumption norms

for key raw materials such as pulp, solvents, caustic, water and many others.



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Some of the key innovations include



Livaeco | Sustainable Fibre

It is a man-made cellulosic fibre from wood pulp sourced from FSC® certified forests and is traceable across the value chain, thus conserving biodiversity and increasing the green cover.

Livaeco also promises closed-loop process in its manufacturing process, low water consumption and lower greenhouse gas emissions.

Livaeco can be identified in the stores through a Livaeco green tag on the garment. Every garment made from Livaeco has a unique tracer which helps us track the manufacturing history and the end buyer can trace the origin and journey of the garment he/she is buying. Birla Cellulose offers viscose, modal in Livaeco range for a variety of applications.



Antimicrobial properties which kills more than 99% of bacteria and viruses and also inhibits their growth on apparels and home-textiles, thereby making it safe for you.



ANTIMICROBIAL By Birla Cellulose

Liva with added protection of Antimicrobial fibres by Birla Cellulose is a leap forward in fashion by successfully injecting antimicrobial agent into viscose fibre which when woven or knitted into a fabric offers protection to the wearer from bacteria and viruses, lasting over multiple washes while retaining comfort, fluidity and softness of the fabric. Be it introducing fluid fashion or offering sustainable solutions through Livaeco, Liva has always been a fashion forward brand. Today, when the world is embracing a change known as "the new normal", understanding consumer needs - Liva's special fabric inherently possesses



Birla purocel™ | EcoFlush

Short length fibres for bio-friendly flushable nonwovens and other applications

It can be used to produce the nonwoven wipes that provides the fine balance between strength and dispersion. The fibres enable to make nonwoven wipes strong enough for product performance during use and at the same time be flushed down the toilet without the danger of clogging the sewer system and that are completely biodegradable.



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CASE STUDY

Circular Fibres made from recycled waste and alternate feedstock

We are working on developing alternate sustainable raw materials for wood pulp. This includes pre- and post-consumer waste converted into dissolving grade wood pulp through a sustainable process and our commitment towards circular economy.

PRELUDE

Fashion industry generates 92 million tons of waste every year, out of which only 1% is estimated to be recycled, most of it is going to landfill and incineration, and large amount of waste leaks to the environment and find its way to soil, aquatic bodies and oceans.

On average, 15-20% of all materials in the supply chain end up as waste before a garment or product even reaches the consumer. This could be cutting waste, un-useable stock due to last-minute design changes, spoilage in transport, or excess stock that is not sold on the retail market and, at times, is incinerated by brands.

In addition, the cellulose sourced from sources such as food waste, algae, microbial biomass, grass etc. have good potential to be used as alternative source of raw materials that can replace the wood based pulp in MMCF industry.

Birla Cellulose R&D efforts and initiatives in development of Next Generation Solutions, Circular Economy and Alternate Feedstock has led to several innovations that have shown promising results and are in various stages of development, starting from lab level, to pilot plant and some have already reached the commercial level.

DEVELOPMENT OF CIRCULAR PRODUCTS

The biggest potential perhaps lies in innovations that enable recycling of pre- and post-consumer cotton waste into fresh cellulosic fibres. In a recent development, Birla Cellulose has successfully developed viscose fibres with recycled content of up to 50% and this product has been produced at our Fibre Research Centre pilot facility. Also, in continuation of our developments, pre- and post-consumer textile cotton waste have been produced at commercial scale now. In a recent production run, we have successfully stabilized production of the RCS certified product, Liva Reviva, containing 5% of post-consumer textile waste and 15% pre-consumer waste. The quality of these fibres are comparable to quality of fibre produced using virgin wood based pulp.

Our current efforts are focussed on developing products made with industrial, post-consumer and alternate feed-stock and increase the use of alternate feedstock in our total production and reduce the cost of production of the next generation solutions, so that in long term we can reduce the dependence on virgin wood based pulp.

LIVA REVIVA

Birla Cellulose has achieved a breakthrough in manufacturing viscose fibre "Liva Reviva" using pre-consumer cotton fabric waste, and following the principles of circular economy.



The journey of Liva Reviva started with Birla Cellulose's commitment of fibre production with **Next Generation Feedstock** as input material. Accordingly, Birla Cellulose has partnered with technology providers in circular textile space.

Birla Cellulose made in-house trials with pre-consumer textile wastes at its R&D Centre and got exciting results with blends of textile waste and wood pulp and finally arrived at recycled fibre with 20% textile waste with fibre properties almost similar to virgin viscose fibre. Liva Reviva with 20% recycled content was established through the value chain and the yarn and fabric properties were evaluated against virgin viscose fibre and found comparable.

We approached Textile Exchange for certification of the product to confirm that the product is made with recycled material. Audit of the manufacturing plant was done by Certification body and after the successful audit of the process we secured **RCS (Recycle Claim Standard) of Textile Exchange**, for Liva Reviva. We are getting very positive response from the leading global brands who have already started to place products made from Liva Reviva in the markets and the volumes are showing excellent growth within a year of launch of this product.

HIGH TENACITY LYOCCELL USING MICROBIOLOGICAL BIOMASS IN COLLABORATION WITH NANOLLOSE

In another development, Grasim and Nanollose have filed patent for high tenacity tree-free lyocell fibres after successful production of these fibres at our R&D facilities. The nullarbor™ lyocell fibres are produced using feedstock from industrial and agricultural organic

waste. Nanollose ferments liquid organic waste from the food and beverage industries, such as coconuts, to produce microbial cellulose that, once prepared, can be spun to create cellulosic fibres. Our R&D team have produced nullarbor™ lyocell fibre that is finer than silk and significantly stronger than conventional lyocell made from wood pulp.

The joint patent provides the companies with additional intellectual property, a superior fibre and enhances the collaboration between the two companies. Both the companies will now focus on taking this success to the pilot production phase to produce initial commercial quantities of fibre and develop applications in partnership of leading fashion brands.

LIVA REVIVA BLENDS WITH DESCAT - NEW NATURAL FIBRE (NNF) MADE FROM PERENNIAL GRASS

The Descat NNF is an eco-friendly natural hollow fibre extracted from a perennial grass that grows without fertilizer and pesticides and does not need irrigation at a high altitude region of Uttarakhand, northern part of India. **TRADC of Birla Cellulose has developed innovative fabric blends of 20% NNF fibre and 80% Liva Reviva.** This innovation is a perfect blend that has the great natural benefits, with up-scaled cotton waste and with low carbon footprint. Yarns with different blend ratios and counts were produced and the touch, feel and aesthetics of the fabric is very good and can be used in applications such as pull-overs, light outerwear etc.



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End of Life Considerations

Nearly 84 million tons of textile waste is generated globally every year. At the end of its life the majority of this waste goes to a landfill, incinerator, or in many cases, find its way to aquatic bodies. The fabrics made from synthetic fibres such as polyester, nylon etc. persist in the environment for hundreds of years causing pollution of land and water bodies leading to harmful air emissions, contaminated water bodies and degradation of land.

Less than 1% of the fashion industry waste is currently recycled. Approximately 24% of 84 million tons of waste produced annually is pre- and post-consumer cotton waste. Recycling just 25% (5 million tons) of global pre-consumer and post-consumer cotton textile waste, could replace most of the wood fibre currently used to manufacture dissolving pulp.

End of Life - Biodegradability & Compostability

Birla Cellulose considers the end-scenario of the products that we make. Our fibres are made from renewable wood from managed forests and they are fully biodegradable in marine, soil and water and compostable in industrial and home composting conditions.

MMCFs are cellulose based fibres and hence follows a natural cycle.

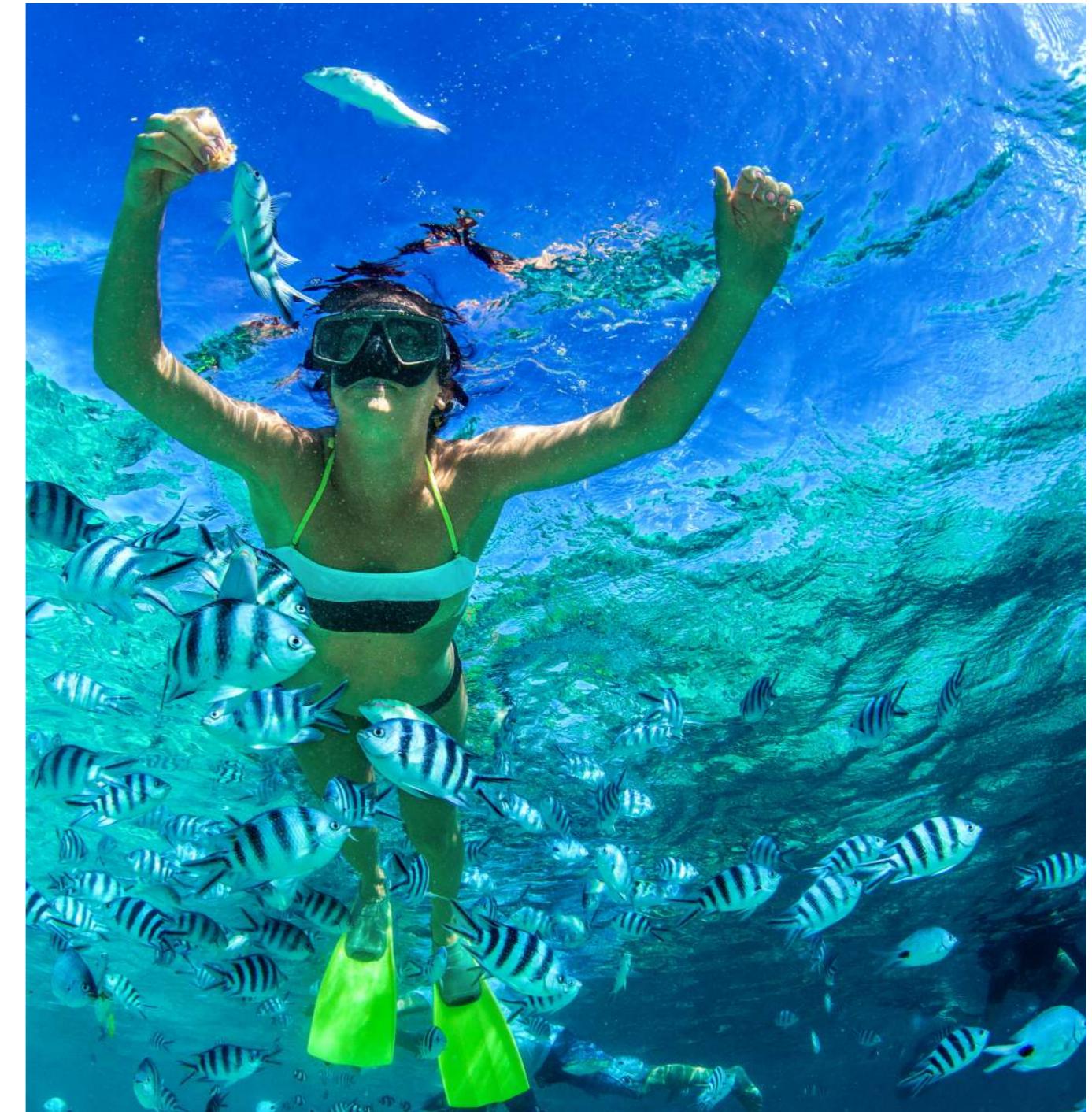
They come from nature and goes back to nature. MMCF are easily biodegradable in soil, water and marine environment.

By virtue of this characteristic of MMCFs, they have minimal impact on the environment during and at the end of its life cycle. The products, like apparels made from our fibres, are therefore biodegradable if they are not mixed with some other synthetic fibres i.e. the biodegradability of end product depends on the processing of fibre in the value chain.



Microplastic Pollution

Microplastic pollution in marine bodies is increasingly becoming a major cause of concern as these plastics impact aquatic life and find their way into the human food chain. Microplastics are generated during the washing cycles and end-of-life of fabrics made from synthetic fibres such as polyester, nylon etc. MMCFs are fully biodegradable and made from natural cellulose which does not have any adverse impacts on human health.





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Product Safety

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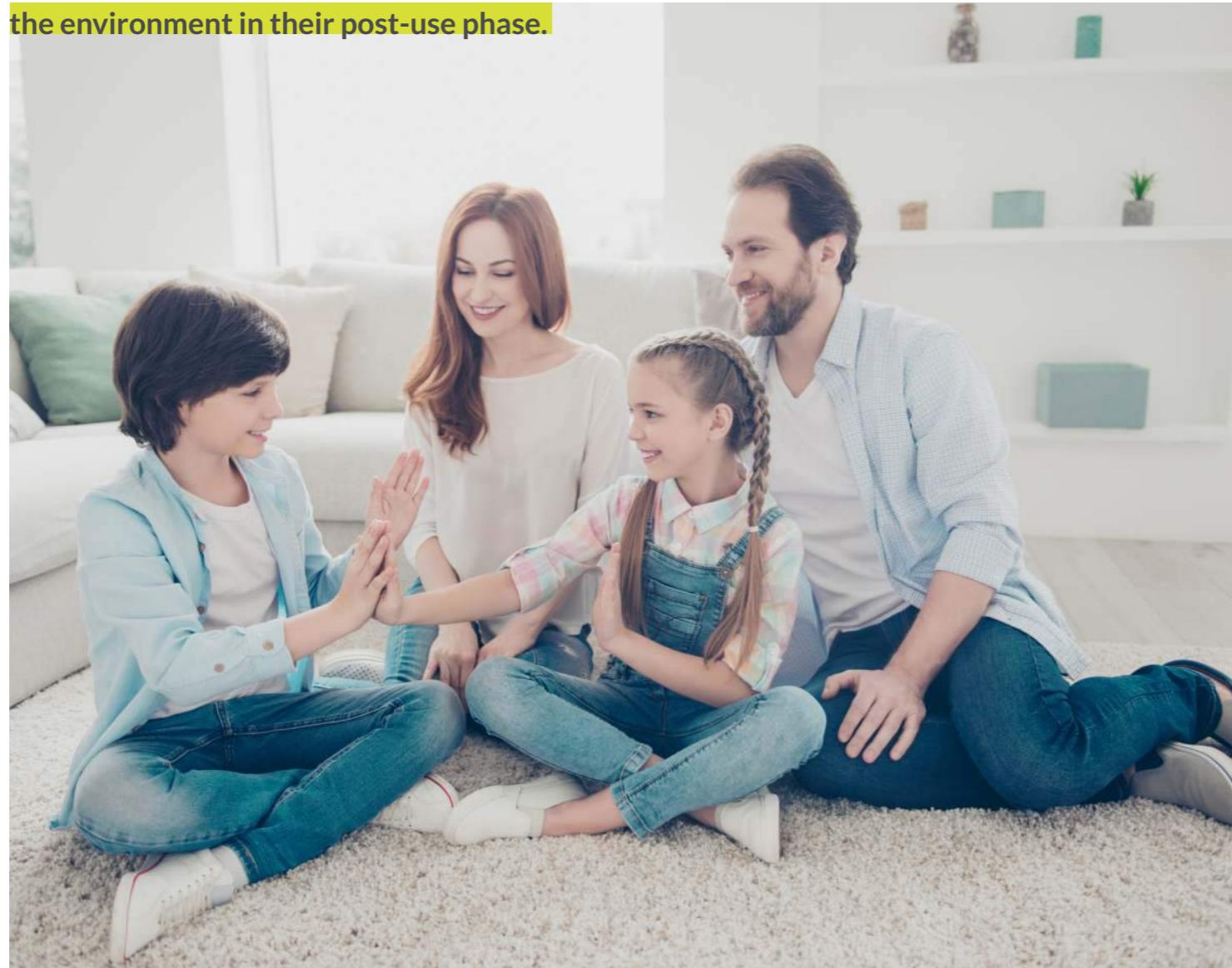
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Safety of our products is a top priority as they are used as basic constituents in other products which are used on a daily basis for various applications: apparel, home décor, personal care, hygiene and medical.

We make sure they are safe during their use phase and do not degrade the environment in their post-use phase.



Following product certifications both for textile and nonwoven applications allays any concern regarding the safe use of products which are worn/used for direct skin applications.

STANDARD 100 BY OEKO-TEX®

All Birla Cellulose fibres are certified to STANDARD 100 by OEKO-TEX®, which is a worldwide consistent, independent testing and certification system for raw, semi-finished, and finished textile products at all processing levels.



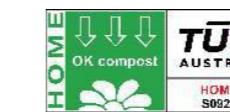
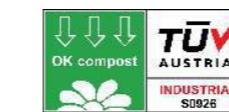
USDA BIOBASED CERTIFICATION

Birla Cellulose received this certification from the US Department of Agriculture (USDA) for their Birla Viscose, Birla Modal, Birla Excel and Birla Spunshades fibres.



OK CERTIFICATION

Regular viscose fibres from Birla Cellulose are certified according to OK Scheme by TÜV AUSTRIA BELGIUM NV/SA for compostability in various conditions like industrial composting and biodegradability in soil, water and marine environments. The fibres are biodegradable and compostable at the end of life and this clearly shows the circular nature of man-made cellulosic fibres coming from the renewable and sustainable raw material, wood.



Dr. Aspi Patel
Chief Technology Officer

Q Tell us about the use of alternate feedstock in viscose manufacturing?

Our innovative circular product "Liva Reviva" that is RCS certified and made using 20% pre-consumer cotton fabric waste is now well established in the market with increasing demand from global Brands. Moreover, it contains unique tracers that allow us to track the manufacturing history and ensure that we meet our consumer promise. Current work in this area focusses on increasing the recycled content as well as using post-consumer waste as feedstock. These products are in the developmental phase and are being tried at our lab scale and pilot-scale plants.

In another development, Australia based Nanolloose has signed a collaboration agreement with Grasim to develop and commercialise tree-free fibres. Nanolloose ferments liquid organic waste from the food and beverage industries, such as coconuts, to produce microbial cellulose that, once prepared, can be spun to create rayon fibre.

Q What are the technical challenges in implementing ZLD at Nagda viscose fibre plant?

This is our ambitious project, which is designed to ~95% of wastewater recovery and very high energy efficiency, a first-of-its-kind project in the viscose industry in the world despite having its operational difficulties. Key challenges are handling high water hardness, organic load and TDS and the membrane technology have to be specially designed to overcome these extreme conditions.



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Valuable Partnerships

- Actively contributing towards development of Standards with SAC, ZDHC, Textile Exchange
- Full Circle Textiles - joint collaborative project with Fashion for Good, Leading Brands & Innovators
- Blockchain based solution - GreenTrack™ - now maps 100% of forest sources in collaboration with value chain
- WBCSD FSG SDG Roadmap tracks the performance of forest based organizations

Challenges 2020-21

- Barriers in scaling up innovations due to long and scattered textile value chain
- Opportunity for integration of different global best practices to reduce duplication



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Overview

Successful partnerships are founded on mutual respect and commitment to agree upon certain principles, which evolve over time as circumstances demand. Common vision and the partnership goals must be clearly defined and shared mutually, having synergies with our objectives for delivering better products for the people and planet. Sustainability across the value chain can be achieved by working in tune with the mutual needs and in strategic alliance of all our stakeholders, thereby generating broader and better results.

We yearn to understand the expectations and obligations of our stakeholders and convert them into meaningful long term missions resulting in tangible benefits, that would envelope the entire value chain. It could range from conserving ancient forests, exploring alternative raw materials, adopting best technologies for closed-loop processes, sustainable products or circularity, transparency & traceability and social aspects.

Birla Cellulose is committed to a collaborative approach and strategic partnerships, where each of the partners, bring their own capabilities and resources to realise greater objectives than each one individually, creating combined higher value for all the stakeholders.

The gamut of our partnerships is vast and includes sustainable innovations, environment protection and people well-being, that are aligned with the UN Sustainable Development Goals (SDGs).

These partnerships would be extremely valuable to us in realising our common goals and Birla Cellulose works with its esteemed stakeholders for a shared vision. For Birla Cellulose, the Valuable Partnership is a collaborative philosophy, trusting, respecting and having a shared vision for a common goal and a better tomorrow.

'Valuable Partnerships' is an important pillar of our sustainability strategy and is consistently applied across all the other pillars, namely Responsible Sourcing, Responsible Manufacturing, Sustainable Products & Circular Economy, and Social Responsibility.

Our Engagement Approach

Valuable partnerships being one of the key pillars of our sustainability strategy, engaging with stakeholders has been our approach to fulfil the elements of valuable partnership. ABG's Stakeholder Engagement Policy and Technical Standards guide us to implement stakeholder engagement into our day to day governance. This relationship of trust, communication, transparency and regular engagement with our key stakeholders forms the foundation of our business value system.

The engagement has the following fundamentals in common:

Informative	Descriptive	Interactive	Collaborative	Proactive	Inclusive
Share desired information transparently and in a timely manner	Communicate comprehensively to provide a holistic picture	Identify stakeholder concerns through regular feedback and set the priorities accordingly	Encourage active collaborations with stakeholders	Identify and address stakeholder concerns promptly	Ensure that each stakeholder feels a part of the company's progress





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BIRLA CELLULOSE STAKEHOLDER ENGAGEMENT PLATFORMS



Stakeholder Group	Engagement Mechanism	Frequency	Stakeholder Expectations	Our Approach
Employees	iSay - Interaction with Leadership Team	Annual	<ul style="list-style-type: none"> Work-life balance Career growth Learning & development Fair wages & remuneration Health & safety Talent Recognising 	<ul style="list-style-type: none"> Recreation facilities, celebration of major festivals, cultural programmes, sports day etc. Employee performance management system Development plan for all employees Functional & Behavioural trainings provided based on Training Need Identification (TNI) Specially designed programmes for Technical Leadership Development Monetary award schemes like iApplaud - an instant recognition scheme PRIDE Award for a team for a high impact project in manufacturing, innovation, marketing etc. Regular safety trainings are imparted to employees and their families, especially road and driving safety Health & Safety programmes in all manufacturing sites
	Townhall Meetings by CXOs	Regular		
	Annual Performance Reviews	Annual		
	Continuous Feedback Programme	Continuous		
	Training Programmes	Continuous		
	Monetary Award, Recognition Scheme (iApplaud, PRIDE)	Regular		
	Employee Satisfaction Survey	Annual		

Stakeholder Group	Engagement Mechanism	Frequency	Stakeholder Expectations	Our Approach
Customers	Customer Feedback	Continuous	<ul style="list-style-type: none"> Customer experience Solution provider Customer value proposition, price, quality, delivery, product features Application development After sales support Complaint resolutions 	<ul style="list-style-type: none"> Customer feedback is taken on continuous basis on the product performance, quality, cost, service and delivery. Customer Happiness is a mission. Implemented Mission Happiness based on Net Promoter Score - combination of top down and bottom up approach Products are certified to globally recognised certifications which ensures product safety Dedicated Customer Technical Service team actively supports customers in productivity and quality improvements, and technical problem resolutions Customer complaint resolution process by root cause analysis
	Visit to Customers	Regular		
	Customer Technical Services	Need based		
	Grievance Redressal	Case-to-case basis		
Value Chain Partners	LIVA Partnership Programme	Continuous	<ul style="list-style-type: none"> Create value from strong product and brand for value chain partners Provide visibility to future trends 	<ul style="list-style-type: none"> LAPF addresses issues such as fashion forecasts, product perfection, innovative yarns/fabrics, connecting partners with buyers Fashion studios launch collections every season which customers use to forecast their demand
	Fashion Forecast	Fashion Season		



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RESPONSIBLE SOURCING					Suppliers & Contractors	Vendor Assessment, Supplier Audits, Review Meetings, Contractor Management	Regular	• Continuity of orders • Timely payment • Transparency	• Supplier risk management process including human rights • Contractor Safety Management • Supplier Code of Conduct, compliance with regulations and applicable laws
Supplier Sustainability Assessment	Exhibitions	Regular	Product and Application Development support for value chain	<ul style="list-style-type: none"> Latest developments in product and processing techniques are shared with all the value chain partners. Target to introduce new products, improve sustainability, quality, productivity of the value chain. Joint development programmes for better materials, optimising cost, logistics, packaging 	Communities	Need Assessment	Continuous	• Local Employment	• Community Need Assessment
Forestry & Biodiversity Management						CSR	Continuous	• Infrastructure Development	• Meetings with Community Representatives
RESPONSIBLE MANUFACTURING						Meetings	Periodic	• Livelihood & Training Programmes	• Development and construction of village roads, school renovation, street lights etc.
Water Management						Social Impact Programmes	Continuous	• Develop weaker section of society, women empowerment	• Skill development programme on tailoring, embroidering and beautician for women
Energy & GHG									• Health camps, pulse polio immunisation programme, rural/mobile clinics
Progress on EU BAT Roadmap									• Animal husbandry projects, skill training, Self-help Groups for Sustainable Livelihood
SUSTAINABLE PRODUCTS									• Collaboration with local communities, NGOs and focus on women empowerment and financial independence
Eco-enhanced Products									
VALUABLE PARTNERSHIPS									
GreenTrack™ Platform									
Collaboration with multi-stakeholders									
SOCIAL RESPONSIBILITY									
Brands & Retailers	Fashion Studios	Every season	• New product innovations	<ul style="list-style-type: none"> Regular meetings to understand the needs and share new designs and products Developing new products aligned to the need of sustainability focussed customers 					
	Partnering	Continuous	• Common goals for Sustainability						



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Customers & Value Chain

Birla Cellulose is a customer-centric brand. Keeping the customer at the heart of every decision that we take, is ingrained in our ethos. Our sustainability decisions are also aligned with the goals of our customers and amplify their efforts in making the planet and society better. Our Value Chain Partners make products and provide services based on the environmental, societal and economic expectations of the customers.

Some of the engagement initiatives taken up for customers and the value chain include:

Customers

Birla Cellulose has a global footprint with customers in more than 65 countries and has a stronghold on each and every global textile cluster.

We have a comprehensive mechanism that leverages multiple aspects across the ecosystem to fulfil the expectations and preferences of customers and markets:

MISSION HAPPINESS

Mission Happiness is an umbrella of various engagement activities with customers carried out on a real-time basis to deliver a positive and uniform customer experience. Employees are encouraged to be agile and proactive towards the customers' requirements.



MISSION HAPPINESS
Let's make it happen. Everyday.

Stakeholder Group	Engagement Mechanism	Frequency	Stakeholder Expectations	Our Approach
Investors & Shareholders	Investor Results	Quarterly, Half-yearly, Annually	<ul style="list-style-type: none"> Corporate Governance & Risk Management Returns on Investment Operational Performance 	<ul style="list-style-type: none"> Structured Governance Board of Directors Risk Management Committee Financial and operational performance discussions Cost reduction approach and initiatives Site visits
	Board Meeting	Annual		
	Investor Day	Annual		
Media	Corporate Communications	Continuous	<ul style="list-style-type: none"> Developments in the organisation 	<ul style="list-style-type: none"> Regularly updating the websites and communicate any changes in the organisation, product launches etc.
	Social Media Platforms	Regular	<ul style="list-style-type: none"> Regular 	<ul style="list-style-type: none"> Using social media platforms for events organised, any publication done by the organisation
Government & Regulatory Bodies	Communication with Regulatory Bodies	Regular	<ul style="list-style-type: none"> Payments of taxes Compliance to laws Pollution prevention Local economy growth 	<ul style="list-style-type: none"> Regular payment of all applicable taxes in all the geographies of operations Compliance to applicable laws of the land Adherence to all norms of Pollution Control Board Employment of local people
	Formal Dialogues	Regular		

CUSTOMER MEET

We engage with our customers on a continuous basis to understand and share with each other key industry trends, future business plans and new developments in the textile sector. Customer meet is one of the key initiatives to reach out to customers.





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CUSTOMER TECHNICAL SERVICES (CTS)

Robust customer service systems and rigorous mechanisms are in place to build a long-term relationship with our customers.



The CTS engages with the customer through reactive/proactive visits, complaint resolution, new product rollout, process optimisation projects etc.

Value Chain

LIVA ACCREDITED PARTNER FORUM

LIVA Accredited Partner Forum (LAPF) is a group of value chain partners – starting from spinners to fabricators to processors, to produce fabrics that meet LIVA standards. The accredited forum has a certification mechanism in place and provides support on marketing, vendor management, design innovation, product perfection and sustainability.



LAPF DESIGN STUDIOS



LAPF Studio is a hi-tech experience centre with more than 2,000 samples of Viscose, Modal and Excel on display with detailed technical specifications. It is a one stop platform for buyers who prefer to review, prefer variety and convenience in buying along with the feasibility to connect with value chain partners. Moreover, LAPF Studio is not just about buying, it is also a hub to connect with garment manufacturers and exporters, local and international brands, international buying houses, agents and traders, and fashion design houses. Birla Cellulose has state-of-the-art LAPF Studios in India (Noida, Tirupur, Jaipur), USA (New York) and Indonesia (Bandung).

Brands and Retailers

Birla Cellulose is not only in the B2B domain, but also moving gradually into the B2B2C.

Globally, the apparel industry is concerned with tracking materials used to make fabric and the conditions in which they are produced.

Birla Cellulose has turned this concern into action by providing relevant information in a standardised format with various traceability and transparency initiatives. Key information on new products, new developments and new market opportunities are also discussed during our interactions.

We have partnered with leading global brands on two things: one, to drive initiatives to trace the source of the raw materials, and two, to help them trace their complicated supply chains. 'Forest to Fashion' is the first supply chain mapping project of its kind in the apparel industry.





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CASE STUDY

GreenTrack™ - Forest to Fashion Blockchain-based Traceability

Being a leading supplier of viscose fibre to global textile manufacturers, Birla Cellulose understands the importance of traceability and transparency. Through its pioneering platform GreenTrack™ based on blockchain technology, Birla Cellulose, along with its value chain partners, provides transparency for the entire journey of fibre from a certified forest up to the consumer's hands on a 'live' basis. This ensures that Brands and Consumers are able to verify that their sourcing is not from ancient and endangered forests and fulfilling the forestry conservation requirements.

The traceability package consists of live mapping of the material journey from forest to fashion through every supply chain node and unique molecular additive inside the fibre for source verification at any stage - fibre, yarn, fabric and garment.

The visibility of forest sources for all of Birla Cellulose's eco-enhanced products has been achieved through our collaboration with Sappi Ltd., the largest supplier of dissolving pulp. The forest information of pulp produced by Birla Cellulose was available on the platform thus far.



Employees



Our employees are our assets and growth partners.

Birla Cellulose supports them by providing an environment where they thrive, feel safe and work towards the organisation goals.

They are aligned with the shared goal and common purpose of our business towards achieving it.

More details on employee engagement are in Social Responsibility section.

Local Communities

Businesses prosper when the local community supports and contributes. We work together with the community and make them an active participant in our business through employment generation and various livelihood opportunities.

Empowering the community has always been a key component of our business strategy. Besides receiving manpower and resources, we engage with them and their families through programmes on education, sustainable livelihoods, healthcare, infrastructural development and social development. We have a dedicated budget for CSR, a defined CSR policy and a CSR committee which oversees and approves all our CSR related activities and expenditure.





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Collaboration with Various Multi-stakeholder Organisations

Birla Cellulose is part of several multi-stakeholder organisations, industry bodies and associations, and engages with them to keep abreast on the latest developments in the industry/sector. Partnerships with these bodies help us introduce new standards and best practices to contribute to shaping the future of the viscose industry.

Here are some of the key partnerships:

CANOPY

Birla Cellulose has put in place a robust sourcing policy, in partnership and alignment with the CanopyStyle initiative, to develop innovative solutions to make its supply chain more sustainable, and to both avoid all sourcing from and to help protect ancient and endangered forests. We work with Canopy to improve sustainable wood sourcing practices, conservation of forests, innovations in development of next generation fibre solutions, and transparency across our value chain.

SUSTAINABLE APPAREL COALITION (SAC)

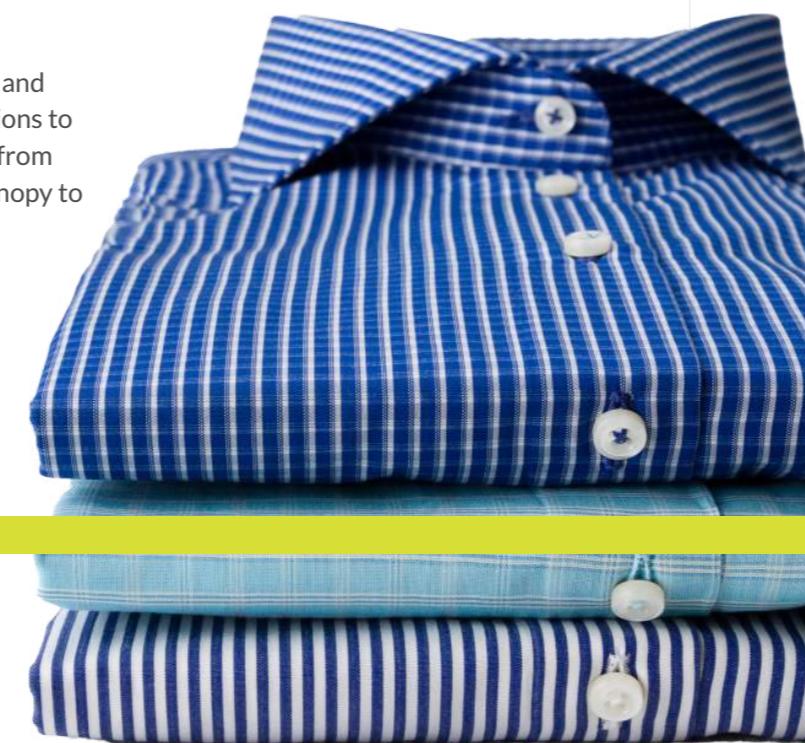
Birla Cellulose is a member of SAC since its inception and has been driving the Higg Index in all its fibre manufacturing units.

We have regular discussions to further improve standards and systems such as Higg FEM, MSI and other tools as promoted by SAC. Birla Cellulose contributed to SAC's 3-year strategic plan for the global fashion industry.

ZDHC - ROADMAP TO ZERO PROGRAMME

ZDHC's mission is to enable brands and retailers in the textile, apparel and footwear industries to implement sustainable chemical management best practice across the value chain. Through collaborative engagement, standard setting, and implementation, it aims to achieve zero discharge of hazardous chemicals.

Birla Cellulose is a contributing member of ZDHC and is a member of several task teams related to wastewater treatment for MMCF, circular textiles, supplier advisory group and standard setting.



FASHION FOR GOOD

Fashion for Good is the global initiative that is here to make all fashion good. It's a global platform for innovation, made possible through collaboration and community. With an open invitation to the entire apparel industry, Fashion for Good convenes brands, producers, retailers, suppliers, non-profit organisations, innovators and funders united in their shared ambition.



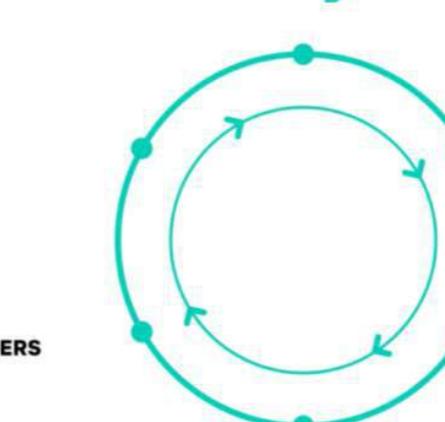
CASE STUDY

Full Circle Textiles - Scaling Innovations in Cellulosic Recycling

ORCHESTRATORS



PUBLIC SECTOR



Laudes
—
Foundation

BRANDS



SUPPLY CHAIN PARTNERS



'Fashion for Good', has initiated a first-of-its-kind consortium project, inviting a select group of innovators to work on technologies in chemical recycling of used clothing and garments to produce new fibres and drive industry-wide adoption.

The 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 man-made cellulosic fibres (MMCF).

Leading global organisations - Laudes Foundation, Birla Cellulose, Kering, PVH Corp. and Target - joined Fashion for Good, to explore the disruptive solutions, with the goal of creating new fibres and garments from used clothing, and ultimately drive industry-wide adoption.



Over an 18-month period, project partners will collaborate with innovators - Evrnu, Infinitex Fiber Company, Phoenix, Renewcell and Tyton BioSciences - to validate the potential of their technologies in this still nascent market. The recycled content produced by these innovators will be converted at Birla Cellulose's state-of-the-art pilot plants to produce high quality cellulosic fibres. From there, fibres will move through the project partners' supply chains to be manufactured into garments.



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CHANGING MARKETS FOUNDATION (CMF)

MMCFs has the potential of being one of the most sustainable fibres if the key sustainability issues are addressed appropriately.

Birla Cellulose is committed to work together with Changing Markets Foundation to address the health and environment issues highlighted in its 'Roadmap for Responsible Viscose Manufacturing'.

TEXTILE EXCHANGE (TE)

Birla Cellulose is a member of Textile Exchange. Our viscose fibres are approved by Textile Exchange as 'preferred fibre'. We are a key partner in TE's Climate+ Strategy project and MMCF roundtables. We are also working with TE on a pilot project on building MMCF industry benchmarks. We engage with representatives of global brands and supply chain partners on sustainable product offerings through Textile Exchange hub networks.

WBCSD'S FOREST SOLUTIONS GROUP

Birla Cellulose collaborates with World Business Council for Sustainable Development's (WBCSD) forest solutions group, a global platform for the forest sector value chain.

The objective of this group is to advance the bio-economy and a thriving forest sector that sustains healthy productive forests and people's well-being. As part of this group, Birla Cellulose will be able to make a real impact on global corporate sustainability, forest-based industries, and the fashion industry. We have implemented WASH pledge in our sites and have made considerable improvements in WASH.



THE MICROFIBRE CONSORTIUM

Birla Cellulose has joined 'The Microfibre Consortium' (TMC) as a research member. It will help TMC in carrying out testing, help develop guidelines and participate in studies. The purpose is to be aware of the developments happening in this area and engage with the development and research work as well as guidance and test methods.

Industry Associations

Birla Cellulose is part of several industry bodies and associations, and engages with them to keep abreast on what is the latest in the industry. Partnerships with these bodies help us introduce new standards and best practices to contribute in shaping the future of the viscose industry. To know more, please refer to our sustainability report 2018-19, page no. 131.



Mr. Rajeev Gopal
Chief Marketing Officer

Q Considering the pandemic impact and the emergence of a new normal, how did you manage to sail through the stormy market situation?

The focus always remained on servicing customers and fulfilling their requirements through best-in-class service and innovative products, along with reducing costs across the value chain. We launched Liva Antibacterial amidst the pandemic and have seen good growth for this fibre. Customers were looking for products with health and hygiene in mind and we were very quick to capture that mind share.

Another thing is the turnaround of our sites by retrofitting the textile lines in the mill to meet the rising demand of nonwoven fibres which is mainly used in health & hygiene. So customer focus has not been lost and we have been able to pass through this.

Q What is the current status of the traceability initiative that the business has added in recent times and how does it help customers and other stakeholders?

With the emergence of COVID-19, digitalisation has become a new imperative for businesses across the globe. Due to lockdowns, digital communication has seen a new emergence and reliance on digital tools and media has seen enormous growth and popularity among the masses. We also launched our blockchain based traceability tool, GreenTrack™, which empowers our consumers to know about the origin of the material from which their garment/clothing is made and also know the journey of the fibre right from forests to retail. The GreenTrack™ platform was introduced in early 2019 and has since been used widely to trace and track the material flow in the fashion value chain, and is currently being used by over 20 leading global brands and retailers and their respective supply chain partners across the globe, while many others are in the process of onboarding it.



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Social Responsibility

- Achieved reduction of 85% in LTIFR to 0.87 in FY20 compared to 5.96 in FY15
- Developed a three-year Safety Excellence Roadmap to achieve our goal of 'ZERO HARM'

- Achieved a score of nearly 95% on WASH by the end of March 2020
- Supported over 600 farmers through sustainable livelihood initiatives in Nagda

- Formed clubs for farmers at Vilayat unit to increase their agricultural productivity
- Installed an RO plant to ensure regular supply of potable and clean drinking water

- Improved drinking water infrastructure for the local community by installing drilling tub, pumping machinery, pipelines, etc. at Vorasamni & Derol villages and nearby schools



EMPLOYEES

Management Approach

We follow a 360 degree approach for our employees. Right from their safety to training, and ensuring their rights.

Our employees work every day towards making us a global leader in the man-made cellulosic fibres industry. Therefore *safety and health of our employees is our priority.*

We focus on their training and capability building so that they improve their performance and become more productive for the organisation. Policies of human rights, fair wages, gender equality, zero discrimination, grievances management, are also in place.

Health & Safety

Birla Cellulose is committed to protect human health and ensuring a safe working environment for all its employees and contractual workers. The three-pronged approach involving felt leadership for safety, embracing world-class processes and practices, and right governance structure for implementation has helped us embed the safety culture with an objective of "Zero Harm".

A robust health and safety framework encompassing all activities guides our safety culture across the organisation. The Health & Safety management system is an integral part of the framework. We are proud that all our operational facilities are certified with OHSAS 18001/ISO 45001 and other applicable international occupational health and safety management systems.



Particulars	UoM	FY19	FY20
No. of Lost Time Incidents (LTI)	Number	40	33
Lost Time Injury Frequency Rate (LTIFR)	Per million hours worked	1.11	0.87

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Key Initiatives

BUILDING SAFETY CULTURE

- Safety culture is an important part of Birla Cellulose's occupational health and safety management. In FY20, we conducted a safety culture (perception) survey across the Indian fibre units and a taskforce brainstormed to develop an action plan to progress towards a proactive safety culture.
- Safety Sub-committee and employee safety performance are linked with the performance appraisal system for all management cadre employees across business. This has resulted in an increased accountability for safety among all employees in the organisation, thereby enhancing the safety management system.

PROCESS SAFETY MANAGEMENT

- The Business has maintained an integrated approach to Process Safety Management (PSM) directed at the elimination of incidents and the mitigation of risks and has integrated in its HSE Management Framework.
- Birla Cellulose has introduced the Process Safety Management sub-committee in its safety governance structure. The sub-committee led by the leadership team has defined charter and identified key PSM elements for implementation across business.



SAFETY TRAINING & COMPETENCY BUILDING

- Birla Cellulose established the Safety Training & Education Management System (STEMS) in 2019 to design and coordinate training plans for all of its employees at site and business level. Our mission is to enhance individual competence and create business value through systematic learning and development focussing on three qualities of employees: Knowledge, Skills and Attitude.
- Birla Cellulose's safety training and competency programme has been developed based on the individual's role in the organisation encompassing Induction & Orientation, safety leadership, safety processes and internal trainer development.



PROJECT SAFETY

Key initiatives w.r.t OHS taken to ensure incident free and safe execution of the project activities:

- Six step Contractor Safety Management programme
- Single Window System for contractors (safety induction, medical examination and equipment/tools inspection programme prior to entry)
- Integrated 'permit to work' system for project
- Site safety inspection and audit by qualified Safety Supervisors
- Periodic Safety Performance review by Project Apex Safety Committee & Project Safety Sub-Committee



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Accomplishments at our current expansion project at GCD, Vilayat site in India



More than 26 million man-hours with zero LTI

During Covid-19 pandemic, project team with nearly 3000 people working safely in compliance to Covid precautions

Expansion project is designed to be EU BAT Compliant from beginning

LIFE SAVING RULES

In FY20, we remained diligent about safety management on a day-to-day basis and remained relentless in its implementation of the 10 Life Saving Rules. The 10 Life Saving Rules focus on the areas that have the greatest potential for serious injury.

They also set minimum benchmark standards across the P&F Business. A breach of the Life Saving Rules automatically triggers an investigation process and escalation for progressive consequence management.



DIGITISATION OF SAFETY

To strengthen the performance and effectiveness of various safety processes and to adapt to the new normal, use of digital platform was employed across the businesses.

We introduced "SHIELD - Safety & Health Information Exchange and Learning Directory" – Safety Portal for Birla Cellulose. Some of the key features of this portal are:

- Various online safety process vis. Safety Observations, Incident Investigation, Permit to Work audits, Safety Training & Competency Development, e-learning courses, Management of Change & Task Management
- High-level dashboards to monitor the progress of above safety processes
- Shared resources vis. safety standards, policies, procedures, latest updates, learning from incidents, good practices etc.

OCCUPATIONAL HEALTH

We have adopted Aditya Birla Group's Occupational Health Technical Standard. The standard sets expectations on occupational health risk assessments in terms of qualitative and quantitative exposure risk management incorporating a hierarchy of controls, health surveillance including return to work and specific management of areas such as ergonomics, ventilation, respiratory protection and stress is driven by Business Level and Unit Level Occupational Health Sub-committee involving the site-specific health & safety professionals and subject matter experts.

Qualitative Exposure Assessments (QLEA) have been completed at all fibre manufacturing sites and based on input from QLEA, Quantitative Exposure Assessments (QNEA) have been initiated to measure occupational health hazards in the workplace through application of established sampling and monitoring protocols. Implementation of recommendations arising out of assessment are being monitored in Apex safety meetings for compliance.

Developing Our People

Developing a high-performance learning organisation and building a strong talent pipeline are our crucial agendas for being one of the most sought-after employer in the industry.

In our endeavour to build a talented workforce, we have a rigorous Talent Management Process that includes Potential Assessment by the manager and skip manager. The potential rating along with rationale for recommendation based on potential and performance grid, is validated by the Talent Council – a team comprising of senior leaders. The Talent Council discusses the functional and behavioural strengths and development opportunities of talent pool along with their career path, and discuss their career movements by defining the bridge and destination roles within and outside the business. The council also identifies the critical positions in the business and successors are marked for the same. Employees selected by Talent Councils are put through the Development Assessment Centre and a Development Plan is prepared for each employee.





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Learning and Development

In these unprecedented times of COVID-19 which has resulted in mass quarantines, lockdowns as well as social and physical distancing, the learning and development strategy of our business has been transformed to maximise the use of digital learning platforms and the use of technology to enable accessible learning and communication methods. All our training interventions are now anchored by the following objectives:



LEVERAGE INTERNAL EXPERTISE



LOW COST AND HIGH IMPACT



COMPLETELY DIGITAL AND TIME EFFECTIVE



CUSTOMISED AND SEGMENTED

As a business, our focus has always been on strengthening Technical, Functional, Innovation and Managerial Capabilities through our several learning and development interventions. All our interventions are in line with our learning objectives.

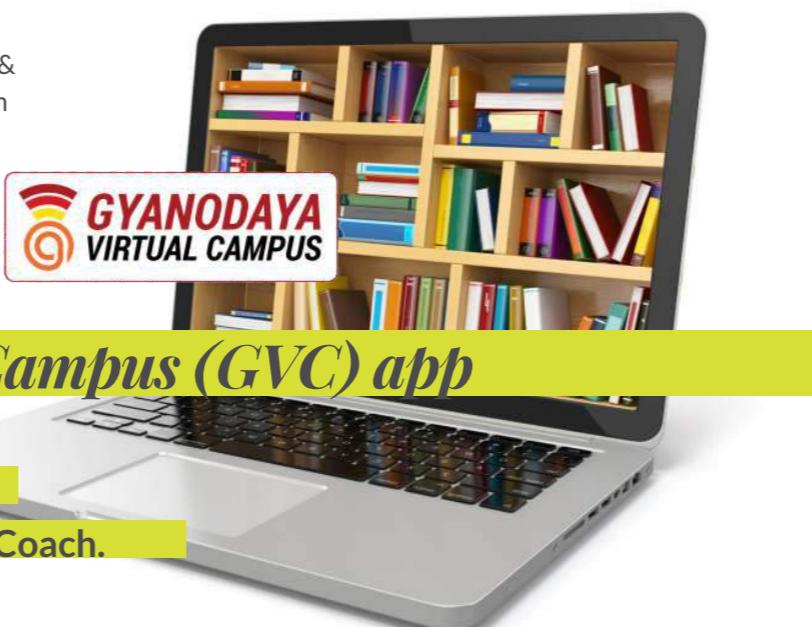
Full Stacking Initiative

This year we launched the Full Stacking initiative to develop multi-skilled technical leaders from within the organisation. A full stack employee in our business context, is one who will have exposure to, and experience of all departments of the process. The initiative calls out in detail the exposure an employee needs to take in each department along with the timelines to make him a full stack employee. It aims at de-risking the business from inadequate supply of skilled technical talent and technical leadership. This exercise will help us create a pool of 'Ready Now' technical leaders, in line with our HR 2020 strategy of 100 'ready now' technical leaders who can be deployed in any part of operations.

Strengthening Capability Using Digital Platforms

We embarked on the digital learning journey in January 2020. As part of Samarthya Academy to strengthen our sales capability, 86 employees at the mid-junior level were enrolled in micro learning - Relationship Building & Influencing. This allowed to include our employees from a distributed location such as China, Turkey, Indonesia, Bangladesh and Thailand.

The employees were assigned byte size learning content on



the Gyanodaya Virtual Campus (GVC) app

through video, quiz, reading material, discussion and perspective building on WhatsApp facilitated by the Learning Coach.

Nurturing Young Women Leaders

The Business has designed an exclusive programme for women employees called **WISE - Women Investing in Skills and Experiences**. The programme aims to develop women employees at the junior level with a focus on building mindset, confidence to lead, and opportunity to come together and gain perspective that has direct relevance to their professional journey. This 9-month journey is designed carefully to offer experiences and exposure.



Programme around self-awareness & dealing with self-limiting thoughts	Enhancing business understanding	Appreciation of financial acumen	Fundamental knowledge of core MMCF manufacturing processes and factory visit	Presentation skills & grooming
Influencing, networking, planning & prioritisation skills	Customer & field visit	Mentoring from senior leaders	Cross-functional/unit projects	

TechX - Technical Excellence Academy for Strengthening Technical Capability

The COVID situation contributed driving the technical learning agenda through digital platforms.

The training modules were converted into smart cards and were uploaded on the GVC app

Internal trainers were trained using MS Teams as a platform to deliver training content

Knowledge absorption tests were created to assess the programme effectiveness

Programme duration was shortened so that the content can be effectively delivered using digital platforms

Employees from manufacturing, marketing, R&D were part of these technical capability programmes

Leadership Connect

Our leadership team continuously and consistently has been interacting and communicating with employees to ensure that they clarify all doubts and speculation about any future uncertainty and share regular updates on the current business scenario. Our regular annual webcast, 'I Say', was conducted by the ExCom team which includes the Managing Director and CXOs. They share business updates and the actions taken so far with all the Birla Cellulose employees across geographies.



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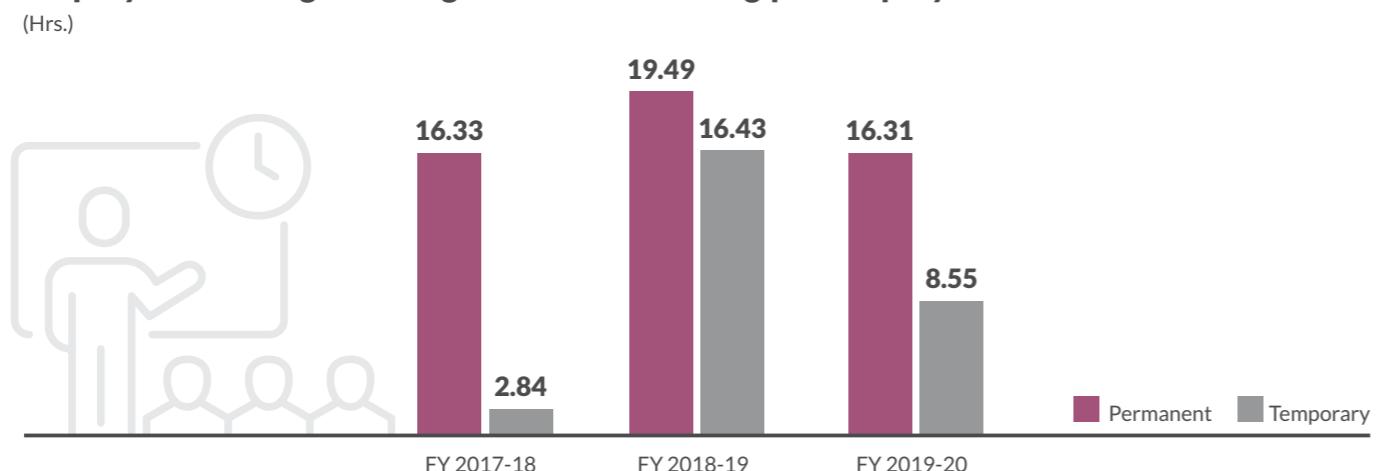
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Leveraging Internal Expertise Through Reverse Mentoring

To leverage internal expertise, we launched a Reverse Mentoring programme for our Mid to Senior managers. We have around 40 managers who are learning through the Reverse Mentoring process on cross-functional topics which will make them more effective. The learning topics are financial acumen, labour laws, technical process, IT skills and sustainability.

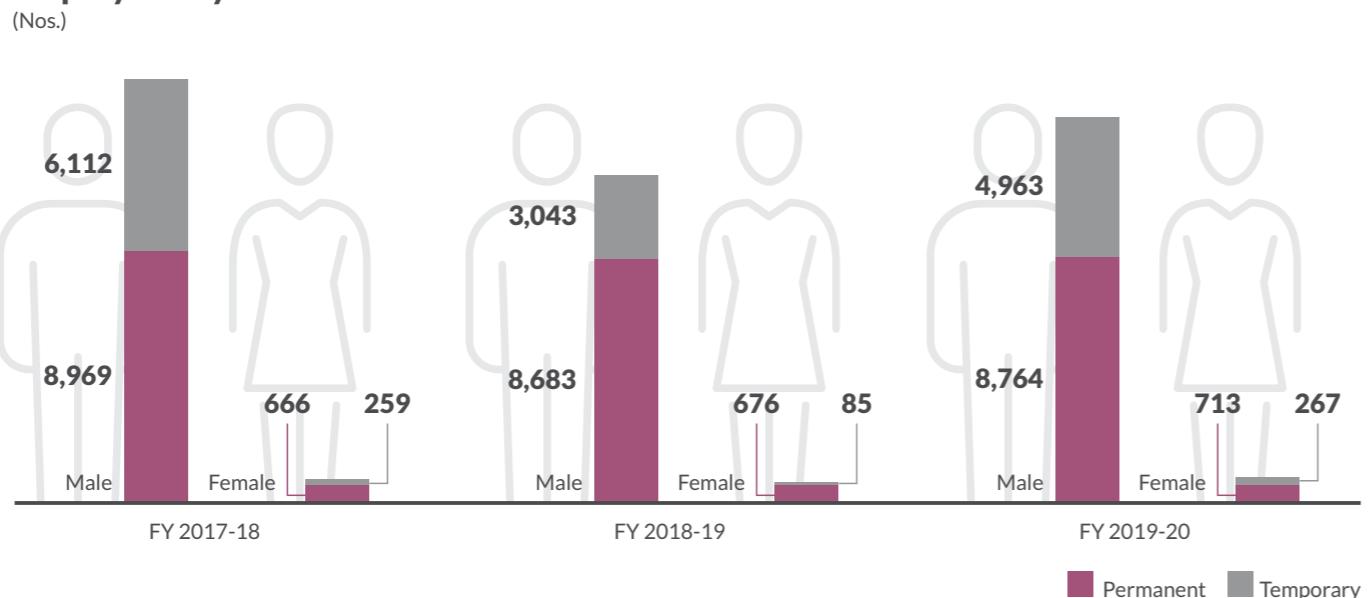
Reverse Mentoring involves the pairing of a younger, junior employee as a mentor to share expertise with a senior colleague who will be the mentee. This programme aims to leverage internal expertise/knowledge and offer unconventional ways of learning from each other. It encourages a culture where different generations collaborate better, leading to better teamwork and workplace relationships.

Employee Training - Average Hours of Training per Employee



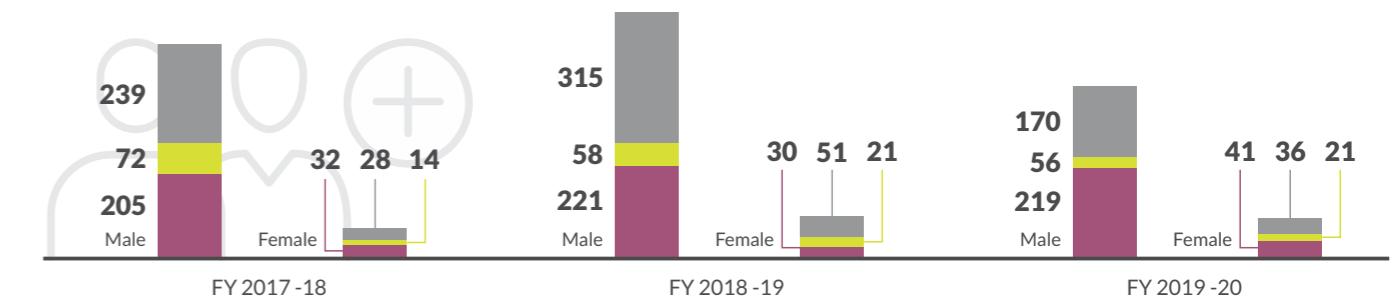
Our aim is to have sufficient employee diversity, both by gender and by age in the pulp and fibre business, across all units. The employee count of pulp and fibre units for the reporting year has been summarised below.

Employees by Gender



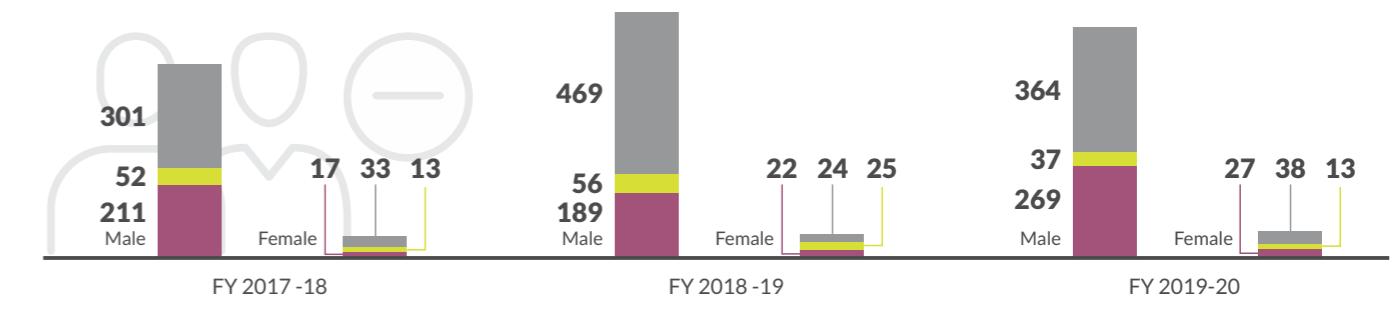
Employee Turnover

Employees Hired
(Nos.)



Employees Separated

(Nos.)



Mr. Parag Paranjpe
Chief Human Resource Officer

Q Why is community engagement treated as a vital part of business strategy?

Business and community are bound by a synergistic relationship where both add value to each other. While the community gives the public consent to operate, shares resources, and provides talent and market; the business offers them employment and products, economic growth, and infrastructure development.

Our CSR vision is to actively contribute to the social and economic development of the communities in which we operate in line with the UN SDGs. In doing so, build a better, sustainable way of life for the weaker and marginalised sections of society and raise the country's human development index. At Aditya Birla Group, we believe, our growth is incomplete without the development of surrounding communities.

Q What are the highlights of the women empowerment programme of the business?

Gender equality, women empowerment and education of girl child are the key developmental gaps in some of the countries where we operate. We target to empower 50,000 women by capacity building and have programmes like vocational skill development to make them financially independent and have programmes to promote girl child education. We have the developmental programme "WISE" (Women Investing in Skills and Experiences), for women employees at the junior level. It focusses on building mindset, confidence to lead, and opportunity to come together and gain perspective that has direct relevance to their professional journey.



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Aditya Birla Group spent **USD 70 million** for COVID measures.
 Grasim's CSR spend for the year 2019-20 was **INR 590 million**
 (~\$8 million) and in addition, it mobilised over **INR 506 million**
 (~\$7 million) through Government Schemes.

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CSR AT ADITYA BIRLA GROUP

Birla Cellulose not only measures success by the profitable growth of its business, but also by the success of its efforts for economic and social development of the weaker sections of society.

Works in
7,000
villages



Runs
5,000
medical camps and
20
hospitals



Provided solar lamps for
450,000
school children



Treated over a
million
patients



Operates
56
schools for
46,500
school children



Skill training for
95,000
people



Reached out to
9 million
people



Midday meals every day for
63,000
children in
268
schools



Immunised
70 million
children against polio



Grievance Management

Grievance management policies are implemented at all the sites and the grievances received from community and other external stakeholders are recorded and responded to, in a swift and timely manner and is monitored by the senior management team at all the sites. The actions taken are communicated to the concerned and feedback is provided. Complaints from nearby communities are treated with utmost seriousness and dealt with a sense of urgency.

The access to policy and grievance mechanism is publicly available along with grievance forms in the local language. Our Grievance Redressal Policy is available [here](#) detailing the entire grievance redressal process. In addition to this, we regularly and proactively connect with all community stakeholders to build productive and harmonious relations.

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Sustainable Livelihood

Our programmes aim at providing livelihood in a locally appropriate and environmentally sustainable manner through watershed development, formation of Self-Help Groups (SHG) for women empowerment, partnership with Industrial Training Institutes, vocational training through Aditya Birla Rural Technology Parks, Agriculture development and better farmer focus.

We have undertaken several initiatives under the following heads to bring economic prosperity in the lives of local communities:

Agriculture

- 1,154 farmers were covered under on-field demonstration of crop varieties, and sessions to explain how they can avail the benefits from government schemes in Nagda
- 292 farmers benefitted through agricultural trainings at Harihar
- 302 farmers benefitted from the workshop on how to increase agricultural productivity, field exposure visit in Vilayat



Management Approach

Community Service is an extremely important part of our strategy and is deep rooted in Aditya Birla Group's philanthropic philosophy of actively contributing to the social and economic development of the areas that we operate in.

We proactively engage with the community around us to understand their expectations and contribute to enhance socio-economic development in these regions.

This includes facilitating health, sanitation, hygiene programmes, and supporting in infrastructure development such as schools and medical facilities, in surrounding villages.

For Corporate Social Responsibility (CSR), we have a well defined Policy, dedicated budget and a structured committee which oversees and approves all our CSR related activities and management. Our focus is on the all-round development of the communities around our plants. Our partners in development are government bodies, district authorities, village panchayats and the end beneficiaries - the villagers.

Focus Areas



SUSTAINABLE LIVELIHOOD



HEALTHCARE



EDUCATION



INFRASTRUCTURE DEVELOPMENT



SOCIAL CHANGE



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Animal Husbandry

- Integrated livestock development project started in collaboration with BAIF (Bharatiya Agro Industries Foundation) in Nagda
- 3 livestock development centres have been established, each covering around 24 surrounding villages and 12,520 animals treated and vaccinated



SUCCESS STORY

Sewing for Their Sustainable Future

Birla Cellulose provides training to rural girls and women enabling them to become financially independent. The 3-month sewing training programme is one of the main vocational training activities we conduct in collaboration with Usha International.

This year we have provided trainings to 124 girls and distributed 64 new machines to beneficiaries. The training is certified by Usha International and after the successful completion of the course, the trained candidates are eligible to take a loan to start their own enterprise.

Skill Development Programmes



Vilayat unit distributed sewing machines, beautician kits and handicraft kits to women belonging to BPL families benefitting more than 400 women.

- Tailoring and embroidery training were provided to 132 and 60 rural women at Harihar and Kharach respectively.
- Ansuya Mahila Atma Gaurav Kendra was established as vocational training centres in surrounding villages with the objective to upgrade the skills of 60 rural women over a period of 6 months. We run these vocational training centres in our target villages i.e., Kharach and Panjroli with our own certification.

Education



Our endeavour is to spark the desire for learning and knowledge at every stage through formal schools, Balwadis (an Indian pre-school run for economically weaker sections of the society, either by government or NGOs) for elementary education, quality primary education, Aditya Bal Vidya Mandirs, girl child education and adult education programmes.

This year we took the following initiatives:

Promotion of Girl Child Education

Initiated a Girl's Scholarship Programme for students of class 9 to 12 with the objective to support Girl's Education. In FY20, scholarships of INR 4.39 lakh were given to 131 girls identified from 16 villages including Kharach, Panjroli, Kuwarda, Amod, Pandvai, Dungara, Bhaktinagar, Obha, Sahol, Ilav, Balota, Vadoli, Mulad, Kathodara, Koba and Mandroi of Hansot, Mangrol and Olpad Taluka.

E-Shiksha Project

E-Shiksha Project was launched by Grasim Harihar to promote English and Computer Education among students studying in government schools. Under this project our employee volunteers are engaged in teaching computer and English language to students. Total 16 employee volunteers registered themselves in this project. 195 students of primary school in Kavalethu village were trained in computer basics and 130 students of Nalwalgal village were trained in English language.

School Enrolment Day Celebration

Supported the government of Gujarat in celebrating 'Bal Pravesotsav' - School Enrollment Day festival to achieve 100% literacy rate in each village. We distributed education kits including school bags, slates, water bottles, etc. for Class 1 students amongst 1,000 newly enrolled children of 75 primary schools.

School Infrastructure Development

To support school infrastructure at Kosamba education society, we supported paver block fixing at Panjroli Primary school and sanitation construction for girls benefitting 200 students.



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TRC Teach

Employees of TRC teach English to students in grade 1 and 2 of the Champa Lor and Rajapaksi school for the educational development.

PT IBR

PT IBR sponsored the education for 60 people of Cilangkap village till high school as they are not able to attend school due to poverty.

School Health Programme

Through our School Health Programme, detailed diagnosis and comprehensive healthcare services are provided to the primary students by doctors of company operated hospital.

We organised 31 school health camps under this programme in FY20, conducting health check-ups of 1,549 students of 27 primary schools.

Healthcare

Our goal is to render quality healthcare facilities to people living in villages and elsewhere, through our hospitals, primary healthcare centres, Mother and Childcare projects, immunisation programmes, with a thrust on polio eradication, healthcare for visually impaired, physically challenged, and preventive health through awareness programmes.

At TRC, a mobile medical unit for annual physical examinations for communities around the factory ensures that everyone has good health undergoing some basic checks like chest X-ray, complete blood test, urine test etc. are carried out.



Immunisation Programmes

Immunisation camps are conducted in collaboration with government programmes with an intent to support the drives for eradication of Polio, Hepatitis B, Diphtheria and Tetanus. **Nearly 27,800 children have been immunised around Nagda, Harihar and Kharach Units.**

Artificial Limb Fitment Camps

Grasim Harihar organised 'Artificial Limb Fitment Camp' in association with Karnataka Marwari Youth Federation, Bengaluru, where **151 disabled people were given walkers, sticks and crutches to help them lead an independent life.**

Grasim Nagda

We are providing quality healthcare services in 250 villages. We addressed the following major initiatives in the areas of Curative, Preventive, Reproductive, Child and Quality Health care.

To know more about the initiatives taken by our company for COVID relief, please refer to page no. 45 of the report.



PREVENTIVE

An awareness programme was organised to spread awareness on HIV/AIDS, on-spot testing, promote safe sex and reduce discrimination against AIDS victims, especially those in rural areas. 423 on-spot tests were done. More than 3,455 people benefitted through awareness generation programmes.

CURATIVE

- Running a full-fledged, 150 beds hospital (Indubhai Parekh Memorial) equipped with the latest medical facilities.
- 80 beds, fully equipped G. D. Memorial hospital is being run at Ujjain for catering to the needs of the community. Around 1.7 lakh people have availed the benefits from hospitals.

REPRODUCTIVE

Adopted 16 villages for mother and child health care awareness programme that aims to reduce anemia in pregnant women, antenatal care, child nutrition, timely vaccination and institutional delivery. 2,747 beneficiaries got covered under this programme.



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Infrastructure Development

We have been investing in infrastructure development initiatives in rural areas to ensure that communities have access to clean drinking water, sanitation facilities and proper roads, among other facilities.

CASE STUDY

Providing Access to Clean Drinking Water



Improved water supply and sanitation, and better management of water resources, can boost country's economic growth and can contribute greatly to poverty eradication.

■ CHALLENGES

Rural areas of India still don't have access to clean, safe and affordable drinking water. In Madhya Pradesh's Parmarkhedi village in Nagda, Madhya Pradesh, Grasim has been actively supplying 70,000 litres drinking water through 14 tankers on a daily basis for the last 2 years. It has also installed 3 drinking water tanks of 2,000 litres capacity for the benefit of villagers. However, water was not readily available.

■ IMPACT

The ready availability of clean and safe drinking water benefitted many people in the village.

■ ACTIONS

Grasim Industries constructed a state-of-the-art modern Reverse Osmosis (RO) plant in Parmarkhedi village in Nagda, Madhya Pradesh, at a cost of INR 20 lakh with a capacity to process 1,500 litres of drinking water in an hour. Grasim is working towards improving the living standards of the villages in the neighbouring community. The community engagement programme in our focus areas spans across 55 villages and 25 urban slums, reaching out to over 1 lakh people. Setting up RO is just one of the several key steps taken in this direction.

Social Change

Our activities have an indirect economic impact on the people and society, so we contributed towards socio-economic development through initiatives in the field of education, health, livelihood and infrastructure.

Food Donation

To achieve public welfare and overcome poverty, we mobilise funds for social assistance to provide groceries to people such as widows, elderly, and underprivileged people who are classified as poor or unable to help their lives. **892 beneficiaries** affected by this initiative in the village of Tegallega in Indonesia.

Project Ashirwad

Distributed garments to Ashramshala girls and girls of Panjroli village under Project ASHIRWAD, **benefitting 100 girls.**



Floods - Emergency Response

Conducted general medical camp at Bhaktinagar, Panjroli and Asarma **benefitting 5,000 people.** Distributed food packets and drinking water bottles **benefitting 300 people** in the same villages in response to floods.

Exposure Visit at Vilayat

Sponsorship for prizes and meals during Hansot Block level Science and Math exhibition for **200 Government school children.** Appreciation Certificate to CSR team by Block Resource Coordinator.



Get-together with Village Leaders

'SNEH MILAN' - A get-together programme was organised with the objective of engaging with the community. Senior executive team of Birla Cellulose along with **78 representatives including *Sarpanch and Dy. Sarpanch** of surrounding villages attended the programme.

*A sarpanch is a decision-maker, elected by the village-level constitutional body of local self-government.





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Honours



"Overall Winner" in Large Scale Category during "Amity CSR Conclave 2020" organised at Brilliant Convention Centre, Indore



"ICC Social Impact Awards 2020" (Runner Up) in the category of Healthcare

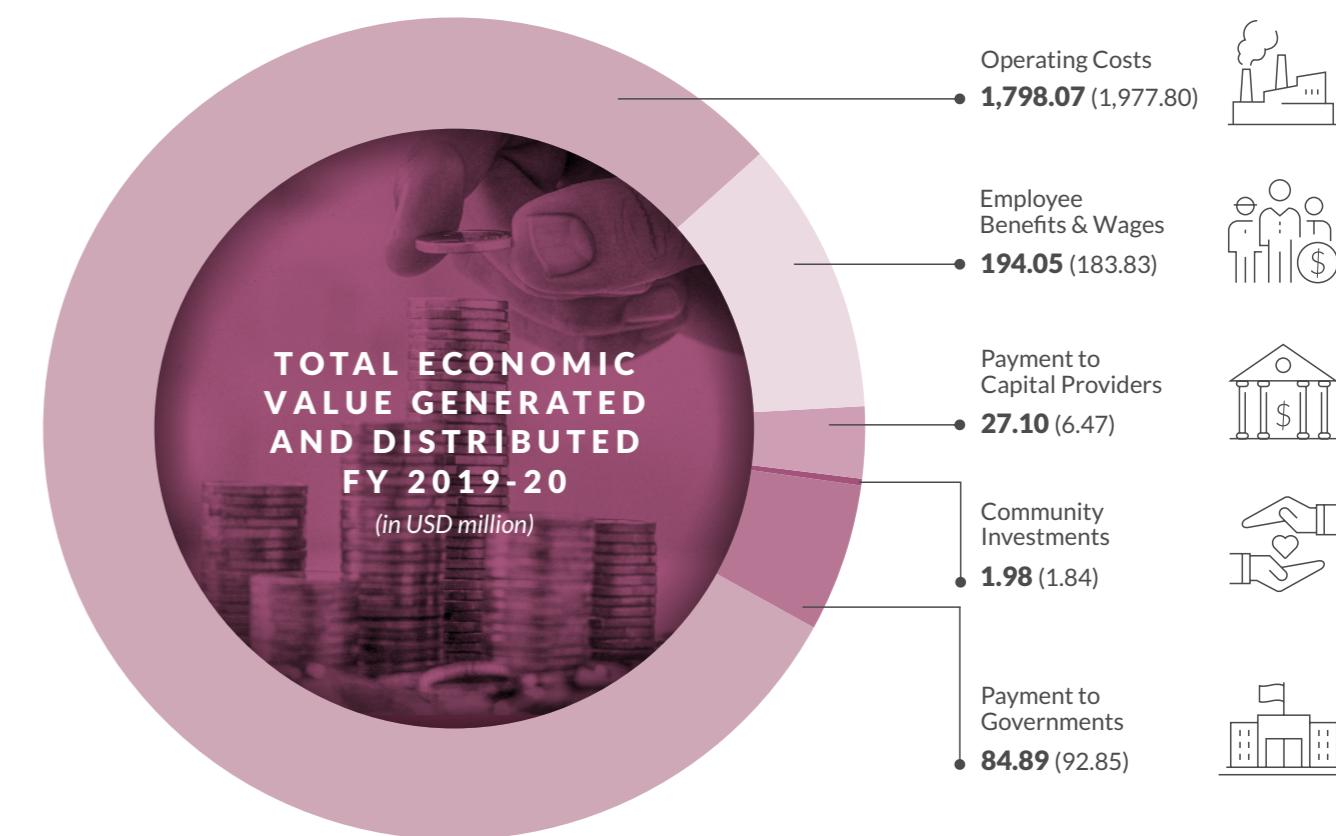


Winner in the Textile and Apparel sector for the work done through "Integrated Rural Development" in the areas of watershed management, animal husbandry, agriculture and horticulture, community health, infrastructure development and addressing social issues

Socio-economic Development

We continued to generate economic value for our stakeholders and tirelessly worked towards achieving our financial targets. We proactively adapted to prevailing market conditions, anticipated risks (including environmental risks) and invested in pioneering initiatives. These efforts made our economic performance stronger, which is one of the pillars of business sustainability.

All the parameters for the economic value generated, distributed, and retained by Birla Cellulose have been mentioned herein.



Economic Value Retained

44.56
(326.56)



Economic Value Generated

**Revenues
2,150.25**
(2,589.35)



Economic Value Distributed

2,106.09
(2,262.79)



Figures mentioned in brackets are of FY19.



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INDEPENDENT ASSURANCE STATEMENT



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The scope of assurance covers the following aspects of the Report:

- Data and information related to the Company's sustainability performance for the period 1st April 2019 to 31st March 2020 on following indicators – Energy consumption, GHG emissions, Air emissions, Water withdrawal, Water discharge by volume and quality, Water recycled, Waste disposal by type, Employee count, Employee turnover, Employee training and Lost Time Injury Frequency Rate (LTIFR).
- Review of the sustainability report for detecting, on a test basis, any major anomalies between the information reported in the sustainability report and relevant source data / information.



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Independent Assurance Statement

The Management and Board of Directors

Grasim Industries Limited
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Worli, Mumbai 400 030

Independent Assurance Statement

Ernst & Young Associates LLP (EY) was engaged by Grasim Industries Limited (the 'Company') to provide independent assurance of Sustainability Report (the 'Report') for the pulp & fibre business (Birla Cellulose) of the Aditya Birla Group, for the reporting period 1st April 2019 to 31st March 2020. This statement applies to the sustainability disclosures of Birla Cellulose, which includes following units:

1. Staple Fibre Division, Nagda (Madhya Pradesh)
2. Birla Cellulosic, Kharach (Gujarat)
3. Grasim Cellulosic Division, Vilayat (Gujarat)
4. Harihar Polyfibers & Grasilene Division (Karnataka)
5. Excel Fibre Division (Nagda & Kharach)
6. P.T. Indo Bharat Rayon (Indonesia)
7. Thai Rayon Public Company Limited (Thailand)
8. Birla Jingwei Fibre Company Limited (China)
9. Domsjö Fabriker AB (Sweden)
10. AV Group NB, Canada (AV Cell & AV Nackawic Mills)

The development of the Report is based on the Global Reporting Initiative (GRI) Standard (Core criteria). The Company's management is responsible for the content of the Report, identification of the key aspects, engagement with stakeholders and its presentation. EY's responsibility, in accordance with the company's management's instructions, is to carry out a limited assurance engagement on the Report and to include specific observations from this engagement. The assurance statement should not be taken as a basis for interpreting the Company's performance across the scope of aspects covered in the Report.

Our responsibility in performing our assurance activities is to the management of the Company only and in accordance with the terms of reference agreed with the Company. We do not therefore accept or assume any responsibility for any other purpose or to any other person or organization. Any dependence that any such third party may place on the Report is entirely at its own risk.

Assurance criteria

Our assurance is in accordance with International Federation of Accountants' International Standard for Assurance Engagements Other than Audits or Reviews of Historical Financial Information (ISAE 3000), and our conclusions are for 'limited' assurance as set out in ISAE 3000. Our evidence-gathering procedures were designed to obtain a 'limited' level of assurance (as set out in ISAE 3000) on reporting principles, as well as conformance to standard disclosures as per GRI Standards.

Scope of assurance

The scope of assurance covers the following aspects of the Report:

- Data and information related to the Company's sustainability performance for the period 1st April 2019 to 31st March 2020 on following indicators – Energy consumption, GHG emissions, Air emissions, Water withdrawal, Water discharge by volume and quality, Water recycled, Waste disposal by type, Employee count, Employee turnover, Employee training and Lost Time Injury Frequency Rate (LTIFR).
- Review of the sustainability report for detecting, on a test basis, any major anomalies between the information reported in the sustainability report and relevant source data / information.

What we did to form our conclusions

In order to form our conclusions, we undertook:

- Remote audit including interview with management representatives and execution of an audit trail of claims and data streams, on a selective test basis, to determine the level of accuracy in collection, transcription and aggregation processes followed for reporting of sustainability disclosures, at the following locations:
 - PT Indo Bharat Rayon (Indonesia)
 - Thai Rayon Public Company Limited (Thailand)
 - Birla Jingwei Fibre Company Limited (China)
 - Grasim Cellulosic Division, Vilayat (Gujarat)
 - Staple Fibre Division, Nagda (Madhya Pradesh)

Limitations of our review

The assurance scope excludes:

- Data and information outside the period 1st April 2019 to 31st March 2020;
- Aspects of the Report and data/information (qualitative or quantitative) other than those mentioned in our scope of assurance;
- Data and information on financial performance of the Company;
- The Company's statements that describe expression of opinion, belief, inference, aspiration, expectation, aim or future intention;
- Review of the Company's compliance with regulations, acts, guidelines with respect to various regulatory agencies and other legal matters.

Our assurance team and independence

Our assurance team, comprising of multidisciplinary professionals, was drawn from our Climate Change and Sustainability network, and undertakes similar engagements with various companies. As an assurance provider, EY is required to comply with the independence requirements set out in International Federation of Accountants (IFAC) Code of Ethics for Professional Accountants. EY's independence policies and procedures ensure compliance with the Code.

Observations and opportunities for improvement

During the review process, we observed that:

- The company is following a data management process which captures sustainability performance data across all units and aggregates the data based on the defined reporting boundary.
- There is scope to include additional disclosures and increase depth of reporting to align with requirements of GRI standards and to improve data management related to air emissions and wastewater quality.

Conclusion

On the basis of our review scope and methodology, nothing has come to our attention that would cause us not to believe that the Report presents the Company's sustainability performance data fairly, in material respects, in accordance with the GRI Standards reporting principles and criteria.

For Ernst & Young Associates LLP

Chaitanya Kalia,
Partner
Dated: 19th February 2021
Place: Mumbai, India



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