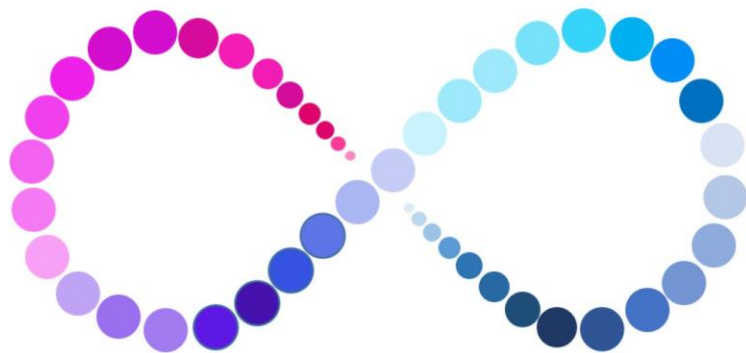


iPEKER



iPEKER

ECO BOOK  
ECO BOOK

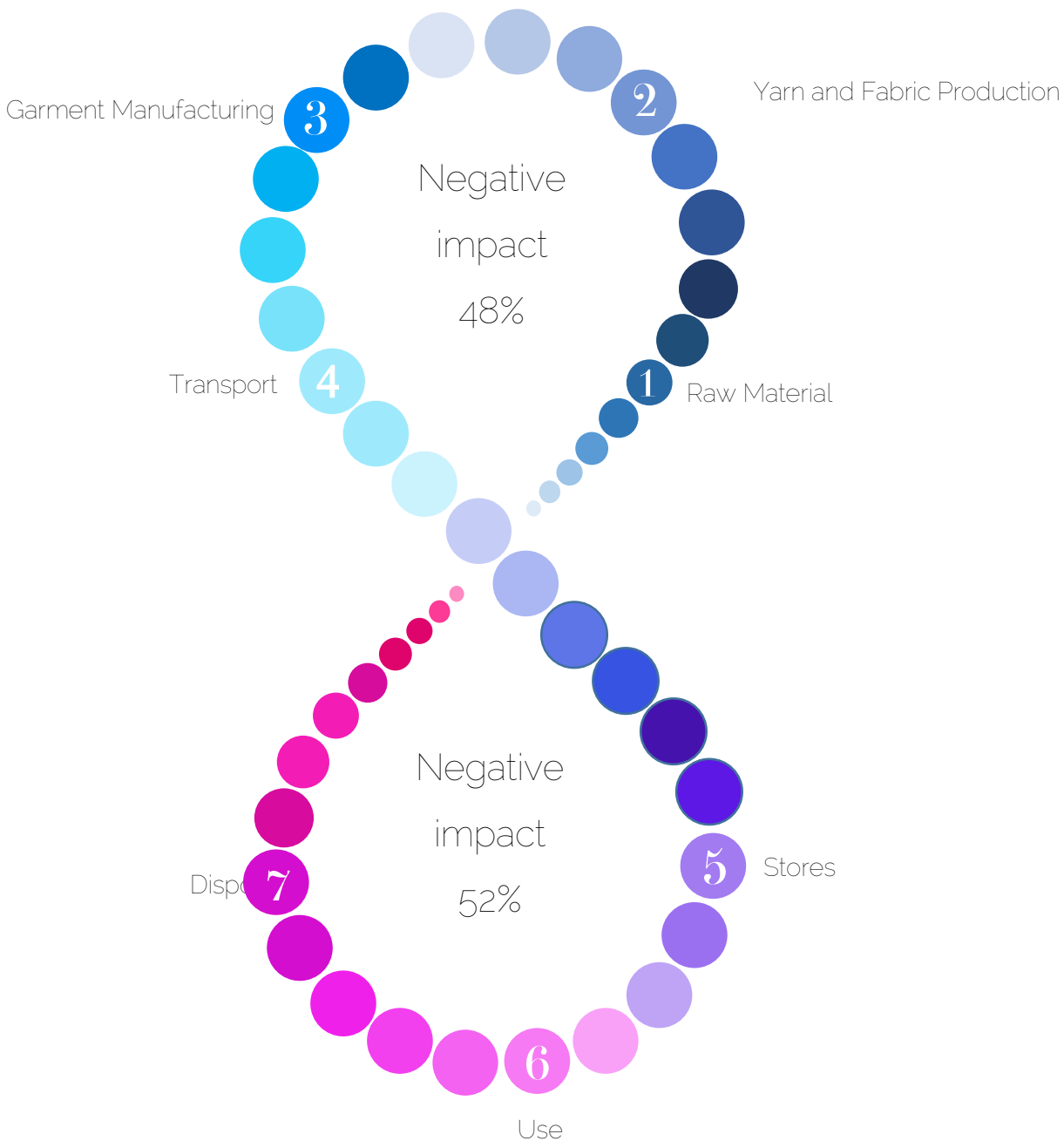




## Garment Life Cycle

When we talk about garment impacts, we really need to think about life cycles. The garment life cycle demonstrates the impacts across the whole life of this garment. It takes a long time to make a textile and a garment.

Being a life-cycle thinker is the most important competency to succeed this idea. We believe that, a brilliant sustainable way of life is available. Sustainability asks us, as humans, to consider really deep questions about our personal relationship to nature and the ethics of our actions and the strategies. Besides those values, production capabilities are very important for the success of our unique model, which is already ensured by İpeker's technical innovations.



Over 10 million tons of clothing goes into landfill every year. Most of the clothes' are not biodegradable or have very slow rates. According to the life cycle analysis of goods (jeans, skirt, t-shirt, etc.), 58% of the negative impacts of pollution is created after the purchase of the end-users. These effects are created via washing, bleaching, dry tumbling and dry cleaning.



## Blue Balance Sustainability Programme

Sustainability is the core value of Ipeker. We are focused on reliable, sustainable and scalable solutions that face up to the challenges our world faces today. We aim to improve all aspects of the world in which we operate—environmental, social, economic—creating a better tomorrow than today. We have really been thinking about the concept of a sustainable way of life for all of us. It is about seven billion people and billions of other biological beings living on Earth.



We aim to coexist Fashion and Sustainability together. We measure the environmental and social impact of our products at both a production level and over their full life cycle, from resource extraction to waste management. We have a sustainability strategy, called 'Blue Balance Sustainability Programme' to help guide our business to have positive impact on the world.



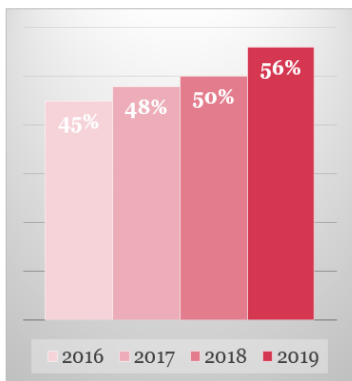
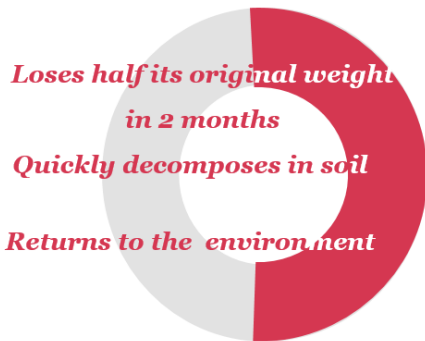
### Social & Environmental Pillars

Ipeker Sustainability Strategy is based on Social and Environmental Pillars to redress the balance of ocean & atmosphere. Our aim is to improve all living beings' life standard from stakeholders to biodiversity.

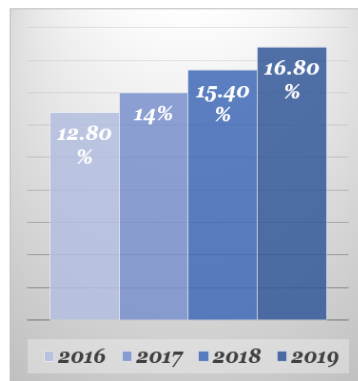
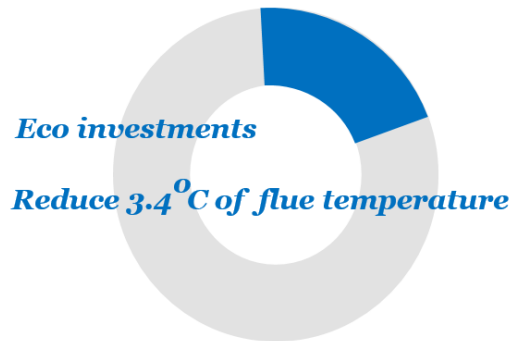
<b>BSCI</b>	<p style="text-align: center;"><b><u>Principles</u></b></p> <ul style="list-style-type: none"> <li>• The rights of Freedom of Association and Collective Bargain</li> <li>• Fair Numeration</li> <li>• Occupational Health and Safety</li> <li>• Special Protection for young workers</li> </ul>	<p style="text-align: center;"><b><u>Approach</u></b></p> <ul style="list-style-type: none"> <li>• No bonded labour</li> <li>• Ethical Business Behaviour</li> <li>• No discrimination</li> <li>• Decent working hours</li> <li>• No child labour</li> <li>• No precarious employment</li> <li>• Protection of the environment</li> </ul>	<p style="text-align: center;"><b><u>Approach</u></b></p> <ul style="list-style-type: none"> <li>• Code Observance</li> <li>• Worker's Involvement and Protection</li> <li>• Supply Chain Management and Cascade Effect</li> <li>• Grievance Mechanism</li> </ul>
<b>Footprint</b>	<p style="text-align: center;"><b><u>Principles</u></b></p> <ul style="list-style-type: none"> <li>• Low Carbon Footprint</li> <li>• Low Water Footprint</li> <li>• Waste Water</li> <li>• Eco-Labeled Dyestuff, Chemical &amp; Solvents</li> <li>• Energy Saving</li> <li>• Water Saving</li> </ul>	<p style="text-align: center;"><b><u>Approach</u></b></p> <ul style="list-style-type: none"> <li>• Periodically Footprint Measurement Mechanism</li> <li>• Detox Programme &amp; ZDHC</li> <li>• Use Dyestuff, Chemical &amp; Solvents in the List of A.</li> <li>• 1:5 Flotte Machines</li> <li>• Reuse and Recycling Water System</li> </ul>	
<b>Animal Welfare</b>	<p style="text-align: center;"><b><u>Principles</u></b></p> <ul style="list-style-type: none"> <li>• Fashion is not based on animal pain and sufferings.</li> <li>• Animal have rights to live in their own living spaces and free.</li> <li>• No animal protein in yarn, dyestuff, chemical and solvent.</li> </ul>	<p style="text-align: center;"><b><u>Approach</u></b></p> <ul style="list-style-type: none"> <li>• Vegan Textile Process</li> </ul>	
<b>Awards</b>	<ul style="list-style-type: none"> <li>• The Most Environmental Friendly Industrial Plant Award 2015</li> <li>• Environmental Award 2015</li> <li>• The Most Creative Product Award Winner 2015</li> <li>• The Most Environmental Friendly Export Company Winner 2016</li> <li>• We proudly announce that Ipeker is the first V-Labeled fabric producer in the world'17.</li> <li>• Ipeker is the winner of Sustainable Business Award 2017</li> <li>• The Most Environmental Friendly Industrial Plant Award 2018</li> <li>• Family Business Association – Polar Star: The Most Sustainable Family Business Corporation Award</li> </ul>		



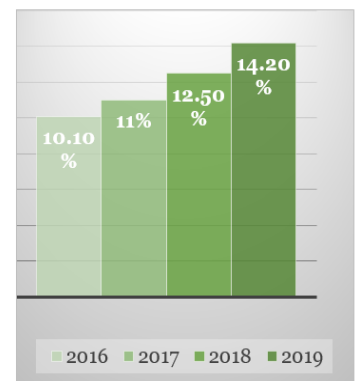
#### Biodegradable rate



#### Energy Consumption



#### Water Consumption



MORE

- Upcycle
- Industrial Symbiosis
- Circular Economy
- Reuse-Recycle-Reduce
- Waste Management
- Biodegradable

LESS

- Water Consumption
- Energy Consumption
- Chemical
- Dyestuff
- Waste



### Social & Environmental Pillars (Continue)

#### Animal Welfare

##### Vegan Textile Process

İpeker's Sustainability strategy is based on Social and Environmental Pillars. We can't think the environment without animal. Animal are an inseparable part of the environment.

We believe that they are not a property of humanity. We have to respect that animal have right to live their life under their natural habitat, in spite of using their bodies as a product. We are against to speciesism.

In line with this thought, İpeker developed new technology and traceability for producing fabric without contain animal DNA under the framework of multidisciplinary approach. The cruelty free business model is called 'Vegan Textile Process', which ensures no animal product from raw materials to finished goods. İpeker fibers, chemicals, dyestuff and other solvents are specially produced for Vegan Textile Process. This new production techniques provide to create the best alternatives of silk fabrics. İpeker, made important investments in machine park for Vegan fabric manufacturing. As a result of the studies to define it as an alternative to the silk, the machine park was reinforced with innovative technologies to increase its silky touch and providing skin sensitivity. In the production line where there is no cross contamination risk, the operations are performed with the same transparency.

İpeker is the first V-Labeled Vegan producer of the world. The European Vegetarian Union certifies that İpeker's fabrics correspond to the guidelines of the European Vegetarian Label and categorised in the Vegan V-Label.

What are the benefits of Vegan Fabric?

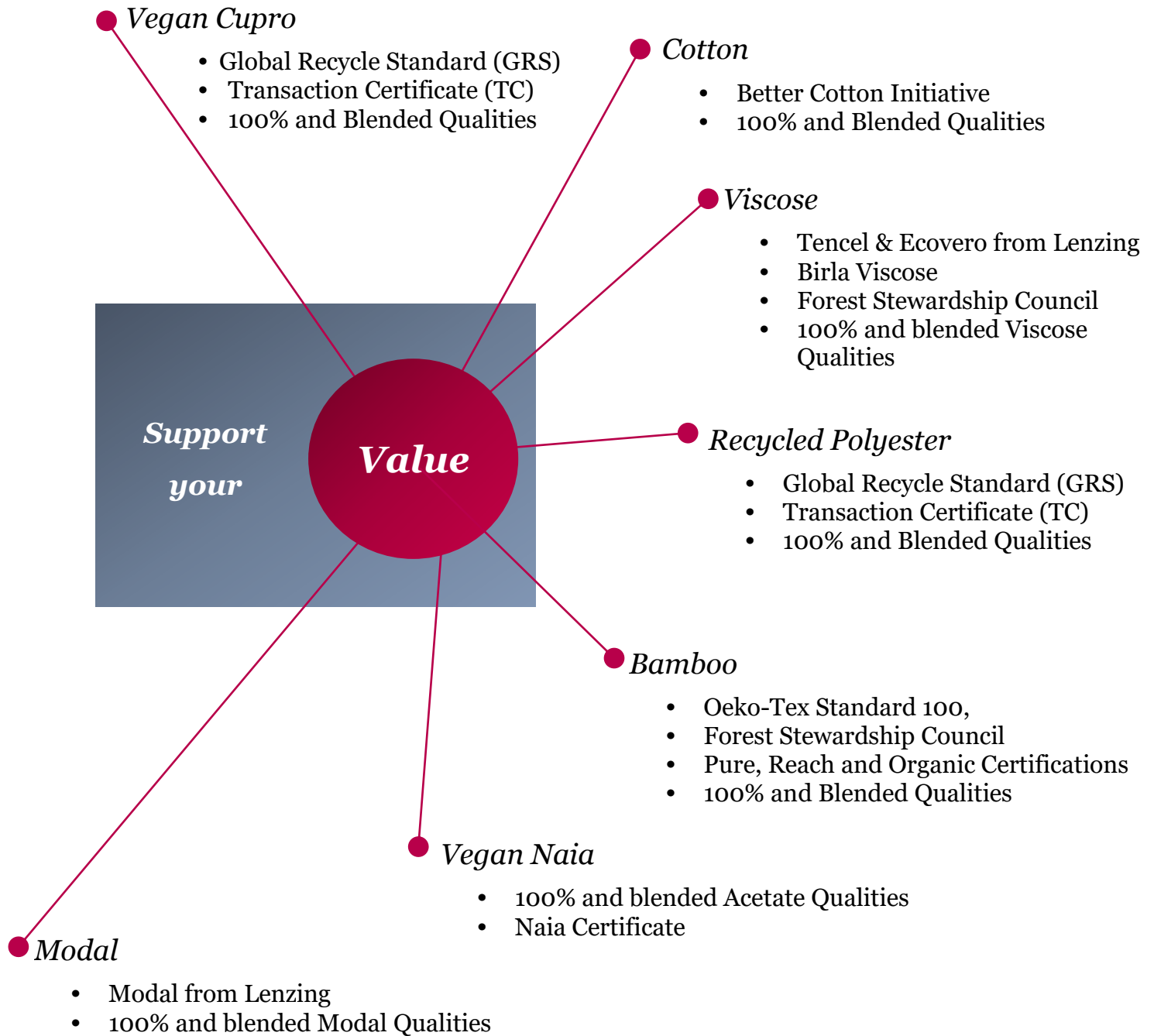
- + *The most important benefit is the clear conscience of not harming or abusing another biological being.*
- + Positive social impact
- + Global positive message
- + Over one billion satisfied Vegan, Vegetarian and Environmentalist people served
- + Positive climate impact
  - The negative impacts of animal-based products to the climate are:*
  - 30% of Earth area uses by livestock industry. This acreage is bigger than moon.
  - 37% of total world Methane gases caused by livestock industry. Methane is 20 times more harmful than CO<sub>2</sub>.
  - 65% of total world Nitrogen gases caused by livestock industry. Nitrogen is 300 times more harmful than CO<sub>2</sub>.

İpeker believes in Collaboration and value added actions are the most important things to support Animal Welfare. We have to be in a transition to a new type of fashion industry based on ecological and holistic principles that prioritizes community, values and respect of all bio.



### Fibers

İpeker concentrates Sustainable Fiber Solutions. Our goal is to develop our product range with sustainable fibers under the framework of traceable system.

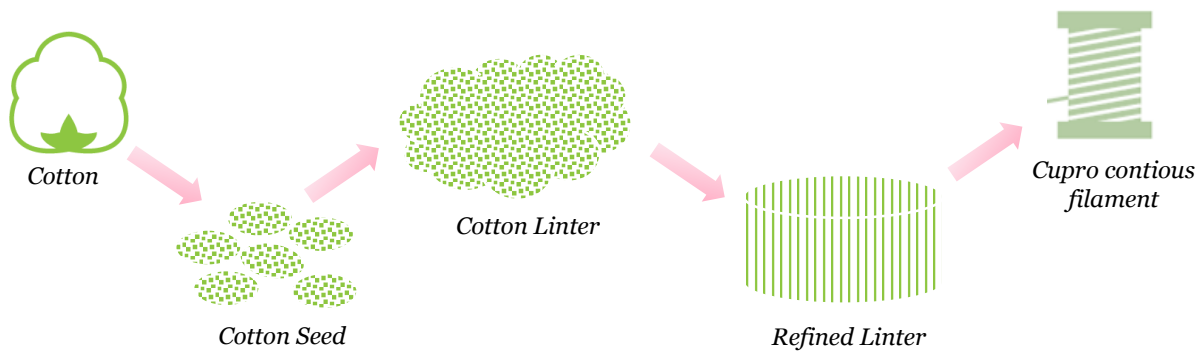


Please find the details of fibers which are used in İpeker at the pages from 9 to 16.

### Fibers (Continue)



Cupro is made from cotton linter, the short downy fiber enfolding cotton seeds, and is normally disposed without being used as a fiber source. Asahi Kasei removes all impurities from the pre-consumer waste and transform it into a pure regenerated cellulose fiber.



The production lines include both of mechanical and chemical processes. Asahi Kasei's production process uses zero-waste policy, and the closed loop manufacturing in which solvents are fully recovered. Any cellulosic waste is used as fuel to generate electricity. According to the company, the conducted Innovhub third party lab test has proven that Cupro can claim full biodegradability end of life option. In addition, the LCA study signed by ICEA. Cupro has ISO 14001, Oekotex Standard 100 and GRS Certifications. It is also "Eco Mark product" that fibers using 100% unused materials. Cupro has GRS Certification.

Vegan Cupro needs less detergent and water for cleaning. It provides low detergent residue comparing to cotton and many other fibers.

On the other hand, Vegan Cupro is gentle on the environment. It's biodegradable, and decomposes in soil. Cupro losses half of its original weight in approximately two months in soil.

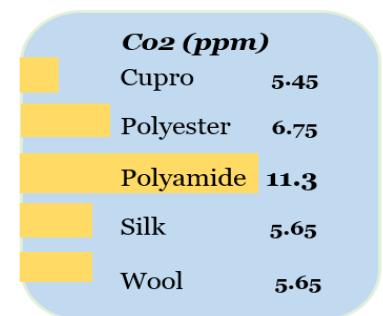
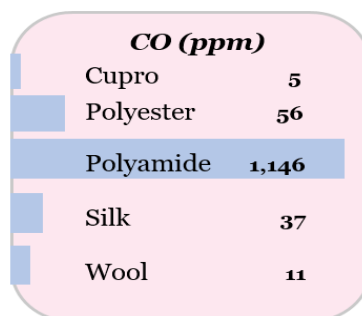




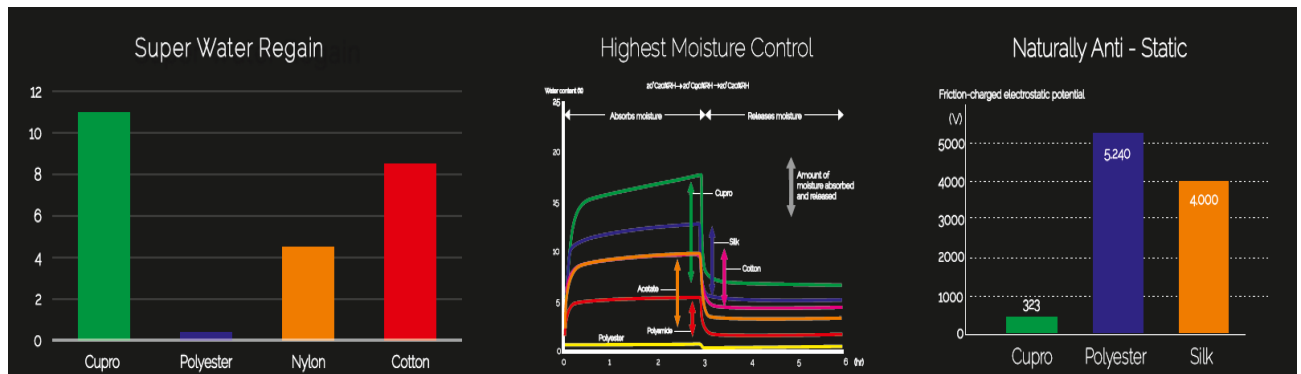
### Fibers (Continue)



### Gas released by the combustion of fibers



Comfort guaranteed all year:



### Some highlights of Ipeker Vegan Cupro Fabric:

- # Born From Cotton, Better Than Cotton
- # The Luxury Elegance
- # Silken Quality
- # Superiority Over All Other Fibers
- # Smooth Hand
- # Antistatic Effect
- # Biodegradable
- # Gentle on the Environment
- # Protein Free
- # Moisture Control
- # Thermal Effect
- # Soft Touch
- # Cool in Summer, Warm in Winter
- # Fluidity
- # Deep colour and Vibrant Lustre
- # Low Detergent Residue
- # Vegan



**Tip** Ipeker is Asahi Kasei's approved Cupro Producer.

#### Cotton

To be a sustainable and traceable Cotton user, İpeker is registered to Better Cotton Initiative.

The aim of BCI is not just procuring products that contain Better Cotton, but also transform the supply chain into a more sustainable one.



#### BCI Cotton provides

- + minimising the harmful impact of crop protection practices
- + promoting water stewardship
- + taking care for the health of the soil
- + enhancing biodiversity and use land responsibly
- + taking care for and preserve fibre quality
- + promoting decent work for Farmers
- + operating an effective management system



#### **Viscose**

Ipeker uses FSC certified viscose yarn.

#### **Tencel**

- + Soft to the skin,
- + Smooth feel
- + Soothing cool feeling
- + Luxurious in shine and flow
- + Thermal Management
- + Moisture Absorption.
- + Colour brilliance - allows color dyes to penetrate deeply into the fiber structure
- + Ability to enhance breathability
- + Closed-loop process, contributing to the circular economy in the textile industry. The use of resources and energy is reduced to a minimum, at the same time we achieve distinguished level of environmental protection and resource preservation.

#### **Ecovero**

ECOVERO™ fibers are produced using pulp, which is derived from the renewable resource wood as raw material. Lenzing purchases wood and pulp derived from responsibly managed forests and certified to come from sustainable sources.

ECOVERO™ fibers have been certified with the EU Ecolabel as meeting high environmental standards (have a significantly lower environmental impact) throughout their life cycle: from raw material extraction to production, distribution and disposal.


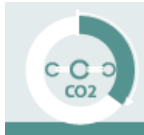

The manufacturing of LENZING™ ECOVERO™ fibers generates up to 50% lower emissions and water impact compared to generic Viscose.



### Recycled Polyester

Made from post consumption plastic bottles collected in Northern Italy by using a mechanical processes (not chemical processes) to convert it into a polymer.

The use of recycled polyester, which requires fewer processing stages, means less energy is utilized during the production process, when compared to using virgin Polyester. As a result, Recycled Polyester has less carbon emission than virgin Polyester. Recycled Polyester has Oeko-Tex, Global Recycle Standard Certifications and Life Cycle Assessment which studied by ICEA.

	Consumption of Energy Resources	Global Warming Potential	Water Consumption
New Life	 50.6 MJ	 3.88 KG CO <sub>2</sub> eq	 3.26 Lt
Virgin PET Fiber	127.2 MJ	5.7 KG CO <sub>2</sub> eq	60 Lt
<i>Saving</i>	<b>- % 60</b>	<b>- % 32</b>	<b>- % 94</b>

- + Skin Sun Protection.
- + UV Resistant.
- + Cotton Touch.
- + Thermal Management
- + Odor Control
- + Moisture Management
- + Cotton Touch
- + Anti-Bacterial



### Research & Development

The strategy of R&D is built on Circular Economy, Innovation and saving Natural Resources.

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# W

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# E

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# K

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## Weaving

### Industrial Symbiosis & Circular Economy

Ipeker's weaving textile wastes (includes recycled polyester) are becoming other licenced textile companies' inputs. E.g: rubber, kitchen sponge, pillow fibre, desert tent.



Ipeker believes to Circular Economy to consume less natural resources. Ipeker also has a collaboration with licenced companies for recycling cupro textile wastes to fiber. The fiber are used for Ipeker Home's pillow and duvet fill.

## Engraving

### Reuse & Recycle

The principle of machine is zero air emission. The waste of dust are collect in a box for reusing and recycling by other licenced companies.

## Eco-Dyeing

### Kitchen

#### Upcycling

Ipeker mixes the waste of dyestuff to create new colours for the orders. (e.g: to create black colour)

#### New Generation

#### Veg. Dyeing

Ipeker dyeing preparation team developed plant based Veg. Dyeing processes for Dyeing and Printing.

The plant based dyestuff is made from curcuma, colchicine, linden, etc.



### Research & Development (Continue)

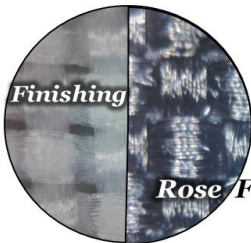
The strategy of R&D is built on Circular Economy, Innovation and saving Natural Resources.

# D

# P

# F

## Dyeing Rose Finishing

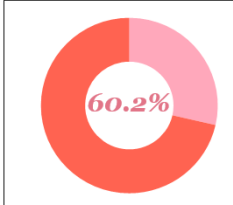
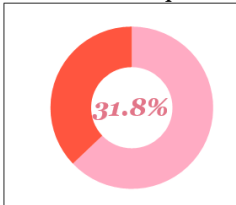


Standard Finishing

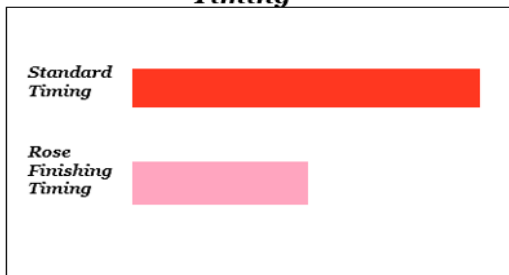
Rose Finishing

Water Consumption

Energy Consumption



Timing



## Printing Eco-Corrosion



The reasons that Ipeker created new production method for printing:

1-Garment LCA:

Fabric production processes include various chemical and solvent treatments. These processes specify end-user's garment life cycle. Eco-Corrosion printing is a new innovative printing solution of Ipeker.

## Finishing Natural Finishing



Standard Finishing process includes high concentrated chemical substances more than 1 KG for 1000 meters. Natural finishing provides same softness with Zero Chemicals by using water and mechanical processes.



### Research & Development (Continue)

#### Dyeing

Rose Finishing  
(Continue)

This is a new patented fibrillation process which is



used for .  
By using such process comparing to our competitors with similar products, we reduce 31.8 % water (20.533 tons per year), and 60.2 % prevent in energy. (300.000 kWh per year)

#### Printing

Eco-Corrosion  
(Continue)

##### 1-Garment LCA: (Continue)

It is new generation of discharge printing. The processes include less chemicals, dyestuff and solvents compared to Digital Printing and Application Printing. It also consumes less water and energy. The motto of Eco-Corrosion is “Less is More”. Eco-Corrosion has more penetration onto fabric. The penetration provides to extend the life of garment.

##### 2-Waste Water:

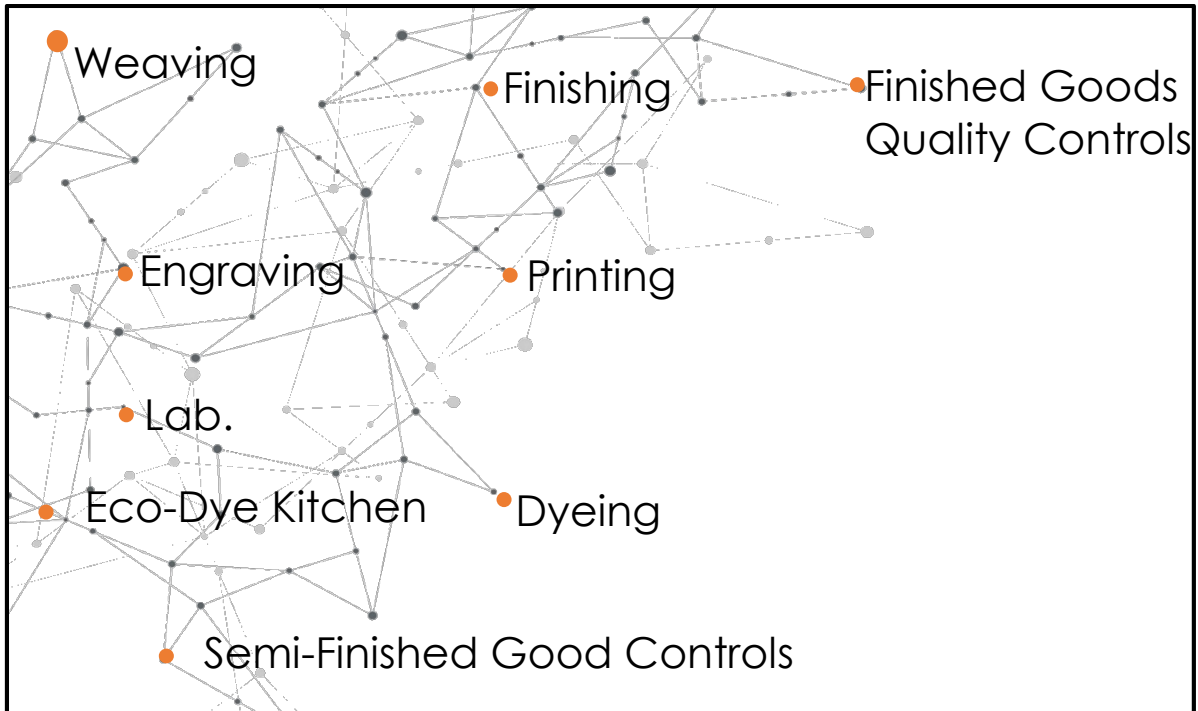
We compared the washing phases of Digital printing, Application printing and Eco-corrosion printing. Eco-Corrosion's waste water is more clear than Digital printing and Application printing's waste water. So Eco-Corrosion waste water needs less water purification treatment, it means less chemical consumption.

##### 3-Fashion is not White Back:

End-users use garment to explain themselves with self-confidence. They think that garments have impactful and specific language. Application Printing and Digital Printing only print the front side of fabric. The End-users do not prefer to use one-side printed garment.

### Production Line

The machine park is renovated with latest innovative technology. Green investments are continue to reduce the environmental foot print. RFID and barcode systems provide traceable processes. İpeker Production Departments follows Lean Production Techniques; Kaizen, 5S, Kanban



#### **Renewable Energy**

İpeker has signed an agreement to get a feasibility report of building a solar energy on the facility roof. İpeker does not use charcoal.

#### **Energy Saving**

According to İpeker's green investments, the facility has decreased the flue temperature by 3.4 °C. This success is provide less climate impact.

#### **Purification Plant**

The water İpeker uses during its production is purely from recycled water that comes from BOSB. With BOSB's latest technology and recycled membranes, the water that has been used environmentally by us then gets re-cycled again using BOSB's latest SCADA system allowing us to give back to nature. İpeker is very proud of using this method and will carry on doing so for a very long time.

#### **Positive Environment Balance Sheet**

The total positive impacts are saving 982,646 grown trees and reducing 158,364 tonnes Co2.





# ipeker

Ipeker Sustainability Team

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FY 2019 - 4<sup>th</sup> Quarter