BETTER FIBERS TO ALL

ÅSA ÖSTLUND, HEAD OF R&D

LEADING THE TRANSITION TO A CIRCULAR TEXTILE & FASHION INDUSTRY

APRIL 26, 2023, BORÅS





TREETOTEXTILE™ AT A GLANCE



Tree to Textile

OUR NEXT STEP WILL BE TO SCALE

TreeToTextile established by H&M Group, Inter **IKEA Group & LSCS** Invest

2014

First industrial proof of concept in bulk textile operations

2016

Development agreement with **RISE IVF. Pilot** spinning machine in operation

2015

Stora Enso joined as enabler to scale

up the technology

Grant from Swedish **Energy Agency** and decision to invest in construction of a Demo plant

2021

2023

Next step Upscaling to commercial size production

Demo plant start up 2023

350 kg per hour and 1,500 tons fiber annual throughput

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OUR PROCESS OVERVIEW

Process steps

- 1. Bale handling & pulping
- 2. Pulp adaptation
- 3. Pulp washing & cooling
- 4. Dissolving of pulp
- 5. Spindope filtering
- 6. Fiber spinning & stretching
- 7. Tow washing & avivage application
- 8. Drying, crimping, cutting & baling

Chemical recovery



Tree to Textile



TreeToTextileTechnology[™] relative KPIs

	Climate impact, kg CO ₂ eq/kg fiber		Water consu dm ³ /kg fiber	mption,	Eutrophicati g P04 ³⁻ eq/kg	i on, fiber
	0.6		<14		<3.6 ¹	
$\hat{\mathbf{\varphi}}$		4.1		191,000		89.3
æ		3.2		3,650	6.5	
Ø	2.3		263		1.8	
			Cotton 🖗 Viscose 🍘	Lyocell TreeToTextile Fiber		

1. Internal LCA has showed figures in line with Lyocell (~1.8); however, many uncertainties remain why <3.6 is including safety margin.

TreeToTextile data from 3rd party verified LCA (2020): Fossil CO2 eq. from cradle to factory gate of staple fibers. Includes pulp produced in Sweden, incl. Swedish electricity mix and steam from biomass. Data on other fibers are extracted from Ecoinvent 3.8.

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Exhibits qualities from cotton

- Similar natural hand-feel
- Comfort close to a cotton-linen blend
- Comparable washability

Brings a light viscose touch

- Borrows some of the luster, elongation and brilliance from viscose (while still fit for cotton replacement)
- Similar moisture regain



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THANK YOU!

ÅSA ÖSTLUND

