

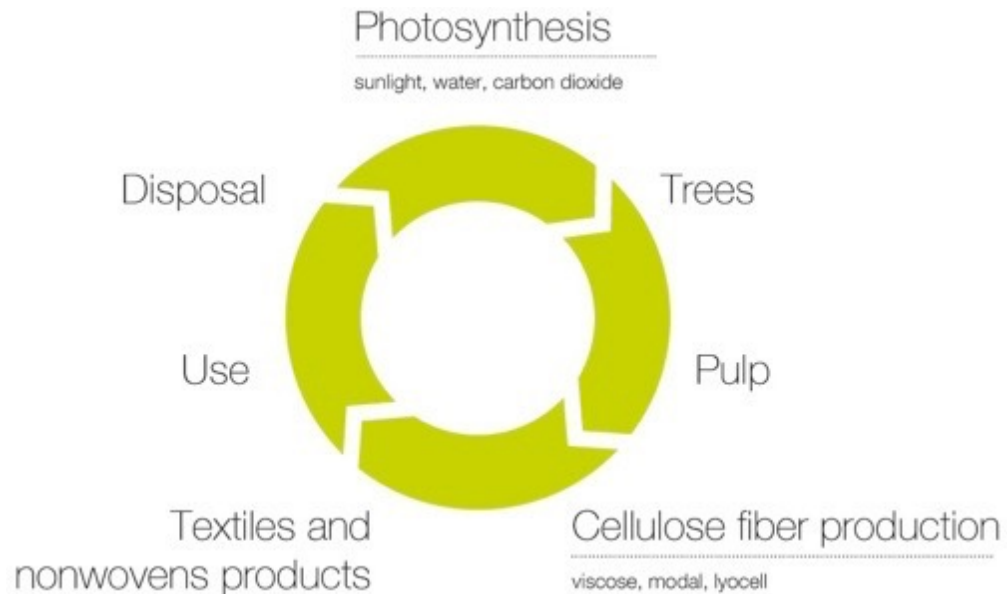


Using Wood is good
Man Made Cellulose Fibers for Textiles

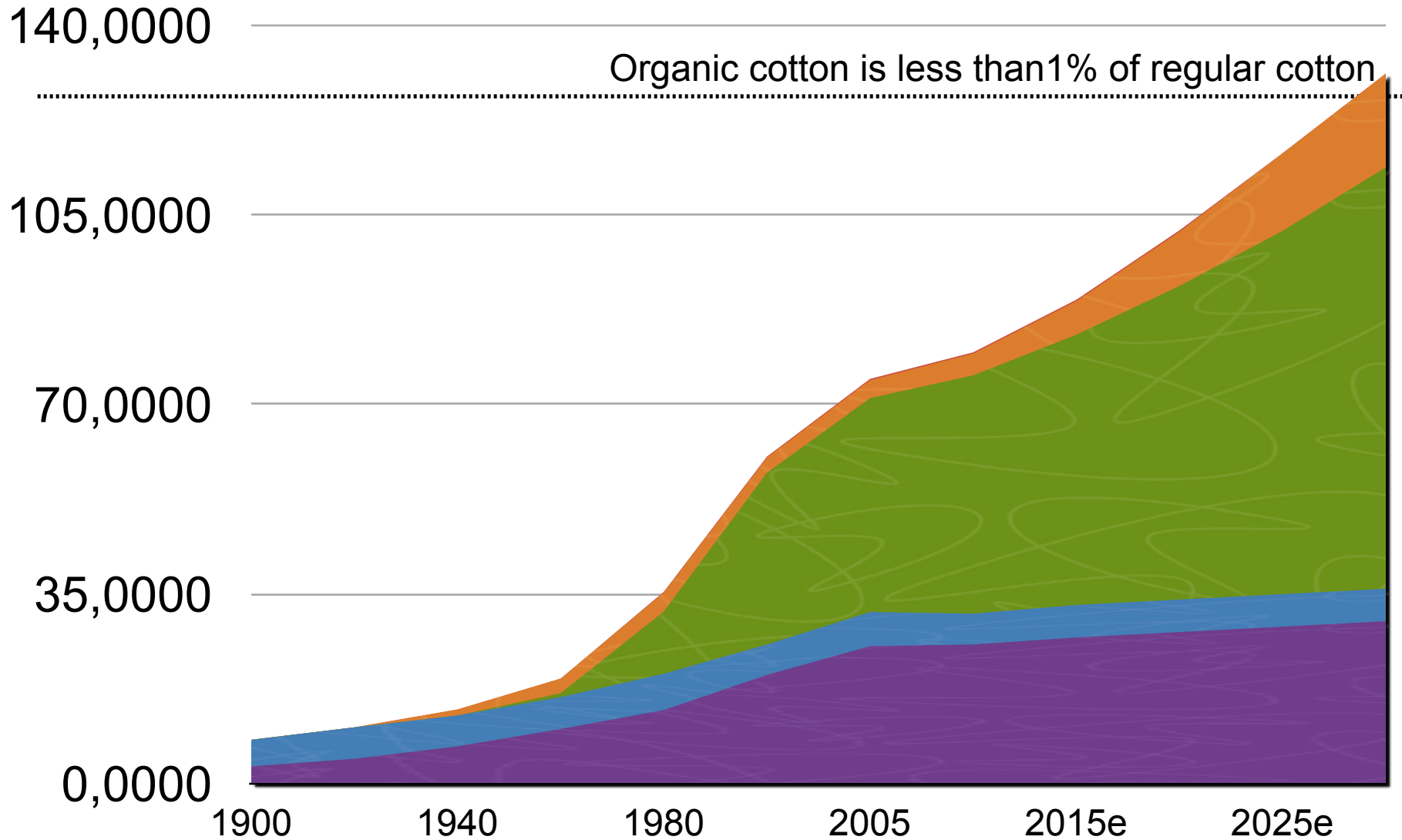




An outstanding sustainable process for the latest generation of cellulose fibers.



World fiber consumption in mn. tons.



3 LEADING FIBER INNOVATION
cotton
organic cotton

other natural fibers

synthetics

MMCF



source: USDA, ICAC, CIRFS

Positive proof of global warming.



Amazingly low eco-footprint

Natural from cradle to factory gate

Wood as raw material and fuel for integrated fiber production

Wood is a sustainable resource, naturally absorbent, fully biodegradable

More than 50% of wood utilized with superior recovery of energy and by-products¹⁾

1) Lenzing site only

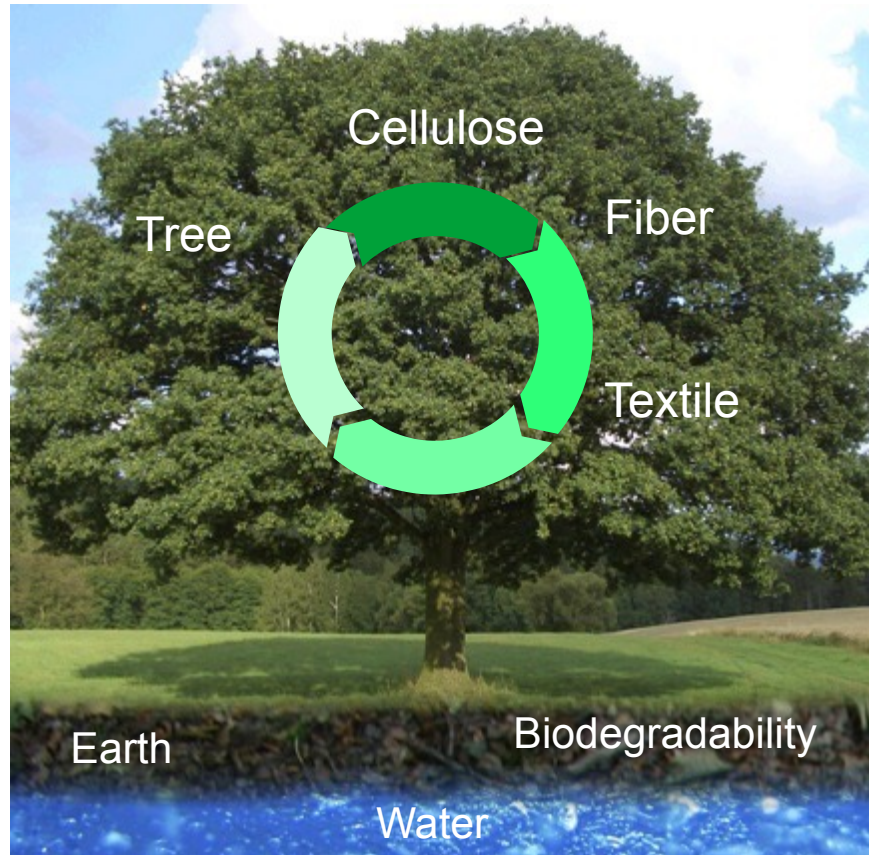
CO₂
+



Photosynthesis

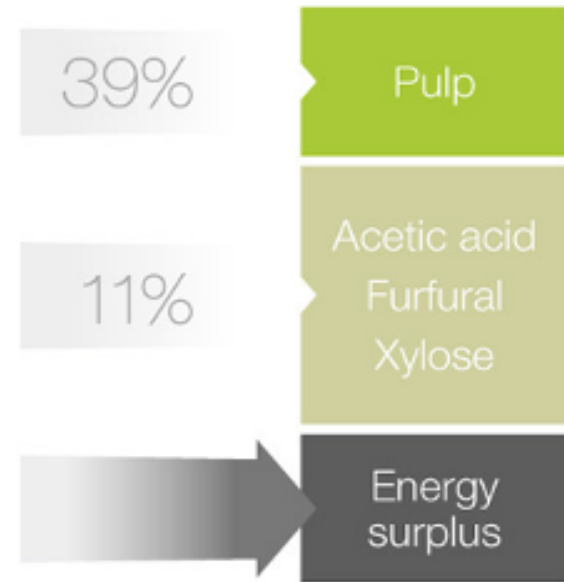


O₂



Highly efficient use of the raw materials

Processing wood into fibers shows a wood utilization rate of up to over 80%.



3 Generations of Cellulose Fibers

Viscose, Modal, Lyocell

Viscose 100 Years



50 years



20 Y.

1910

1940

1960

1990

2011

*) TENCEL® ist die Lenzing Marke für die generische Faser Lyocell

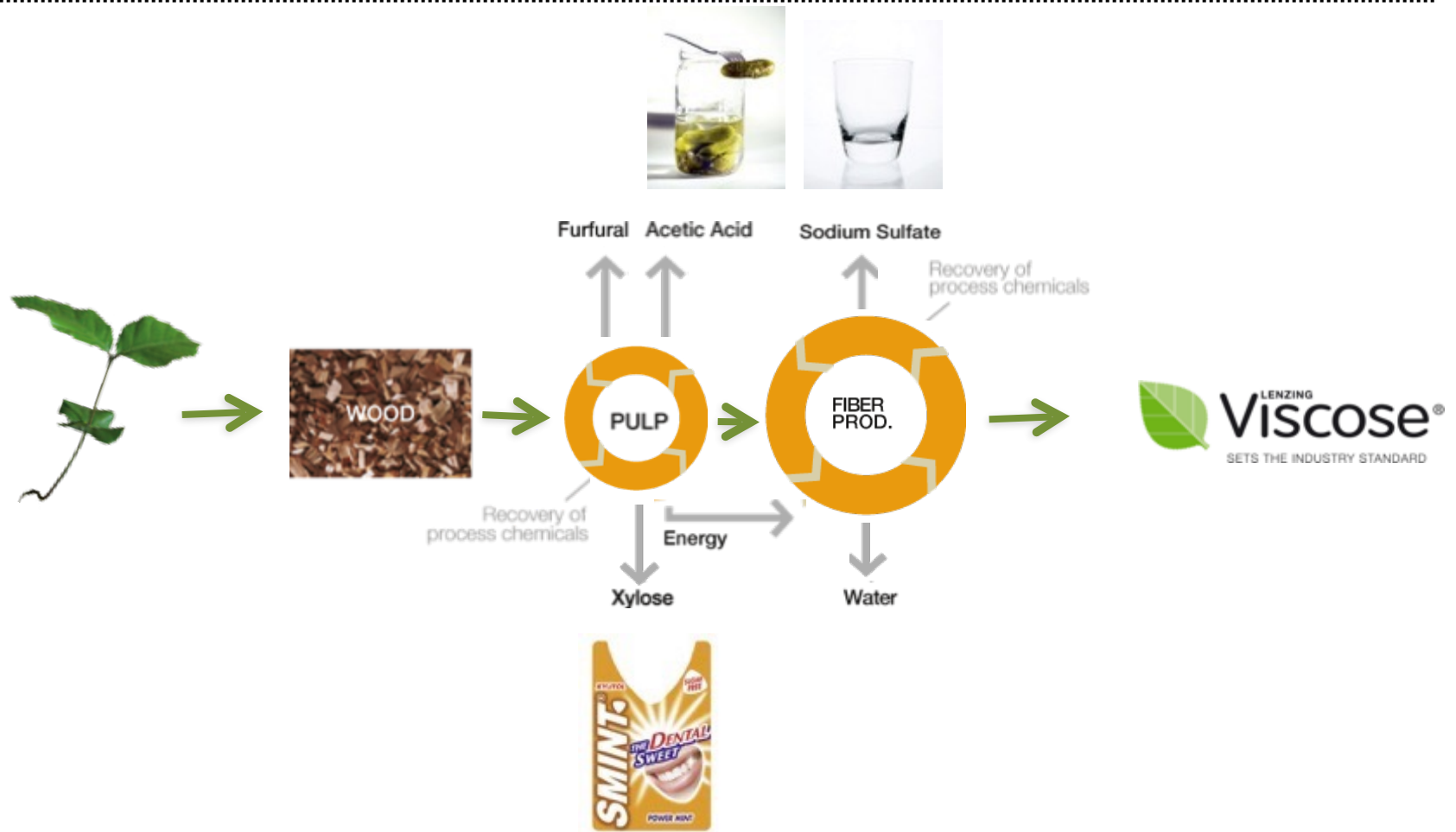
Two main production processes

The Viscose spinning process industrialized in the late 1930ies by Lenzing and Hoechst, after first industrial production in late 19th century.

The Modal spinning process industrialized in 1965 by Lenzing. Both processes are chemical based dissolving and spinning processes. Today these processes are highly engineered and using bypass and recycling technologies to use resources wisely and keep the Eco-footprint at the lowest possible level.

The Lyocell process, industrialized in 1992 by Curtaulds and Lenzing. This process is based on a physical pulp dissolving process and has an amazingly low Eco-footprint.

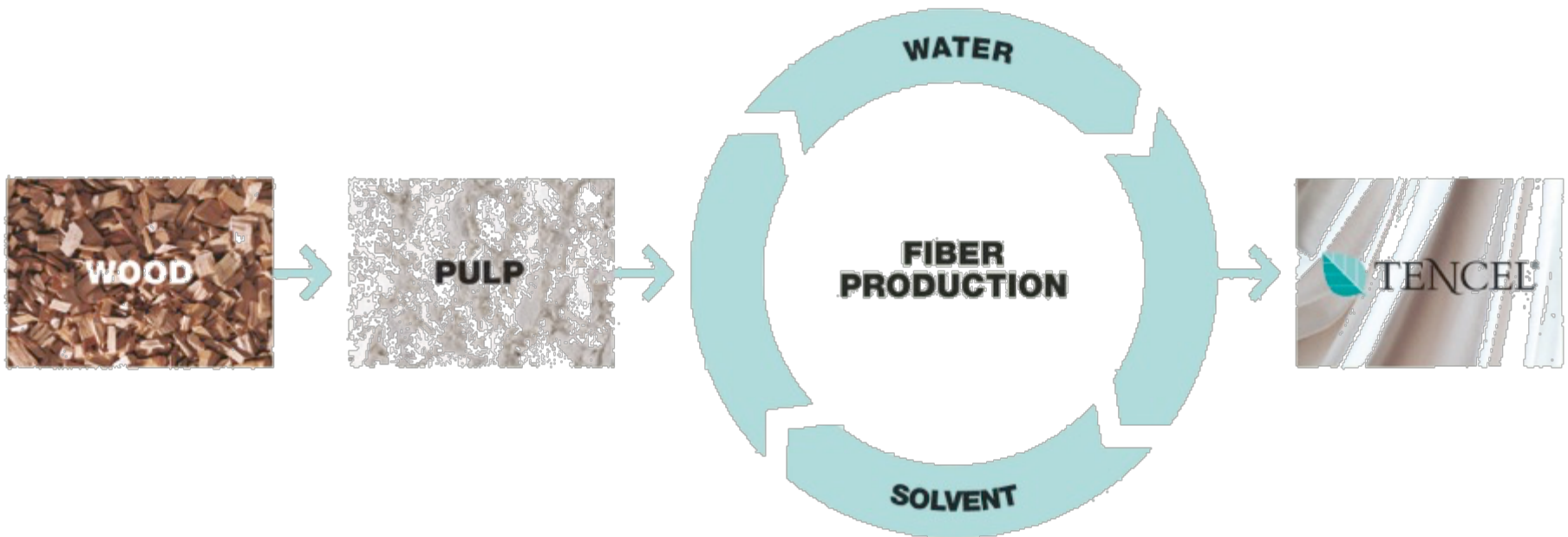
Lenzing Viscose® is produced in an integrated Bio-refinery process



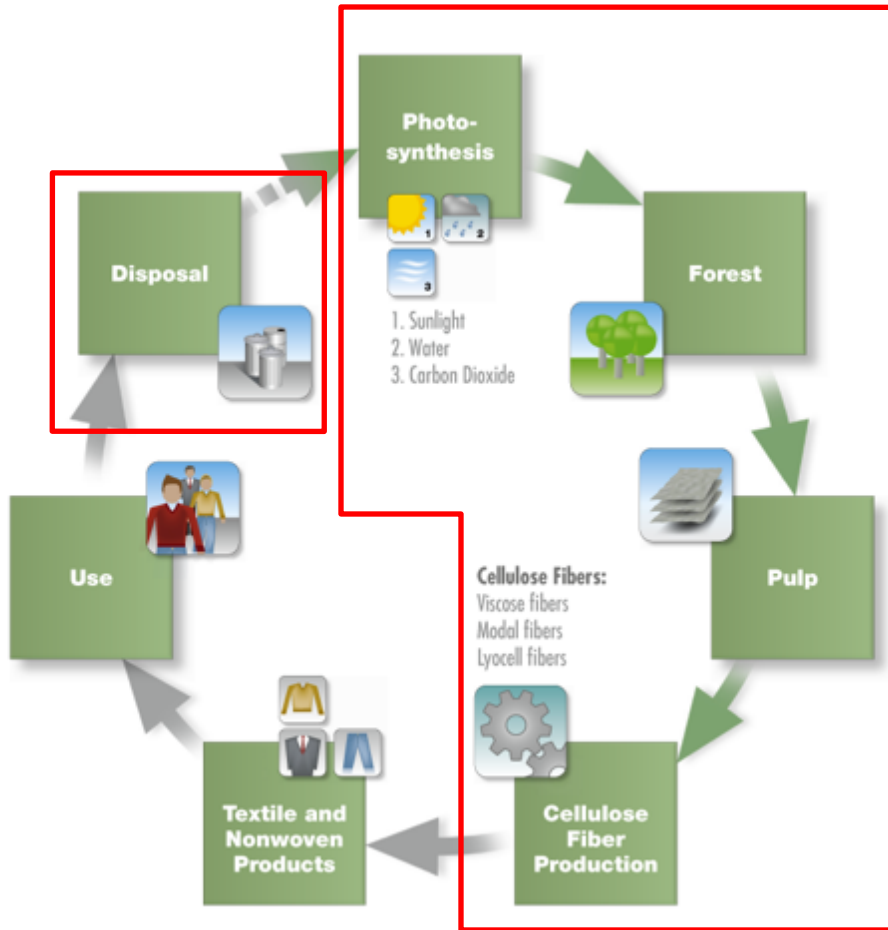
TENCEL® - the most sustainable fiber production process

Closed loop production

99% recycling of process substances



Life Cycle Assessment



LCA as a tool for benchmarking environmental impact of fibre and pulp production (sites, technologies)

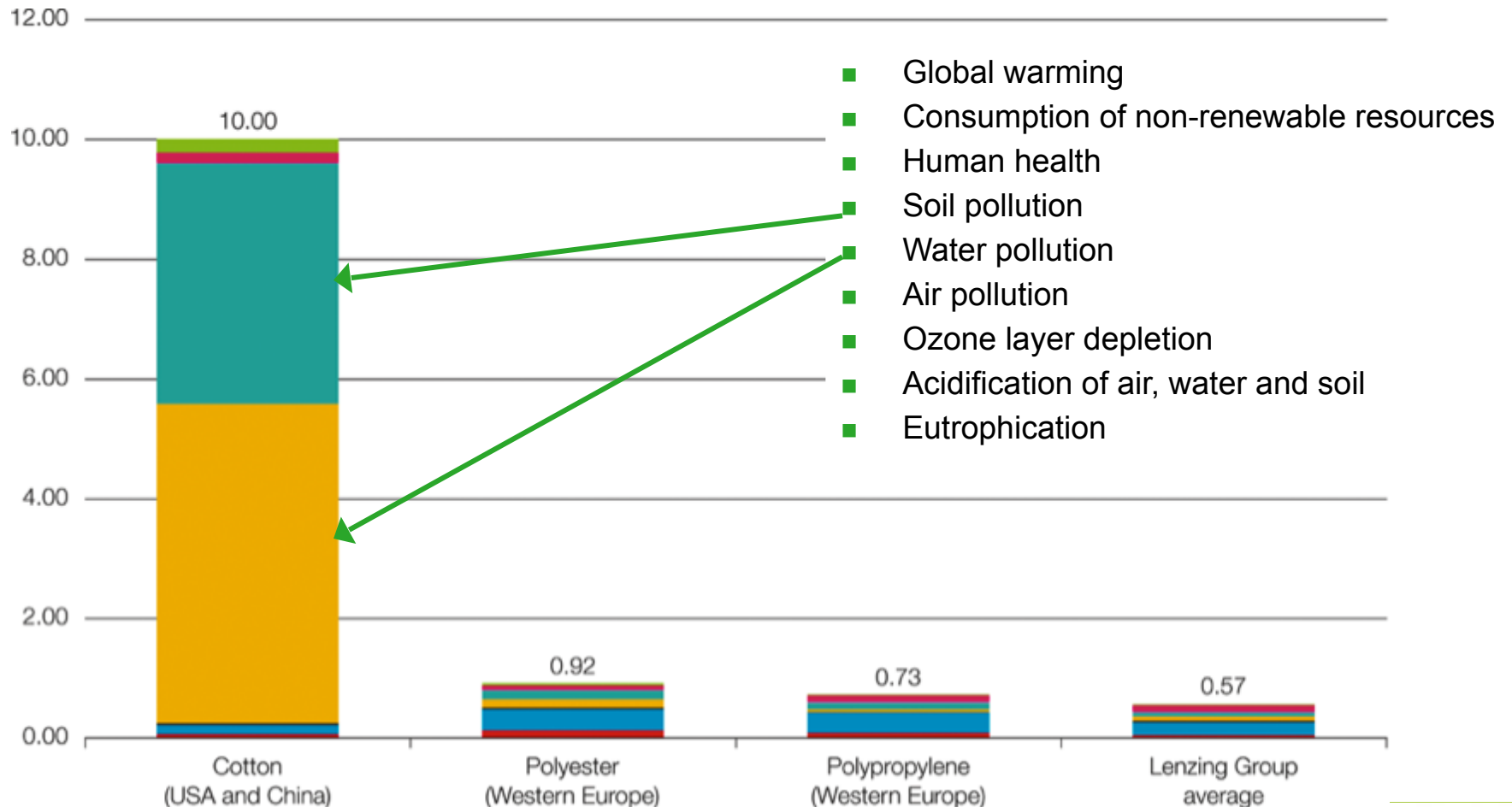
Identifying most critical impact areas

Data are used for ongoing pilots (EU, SAC, MSI)

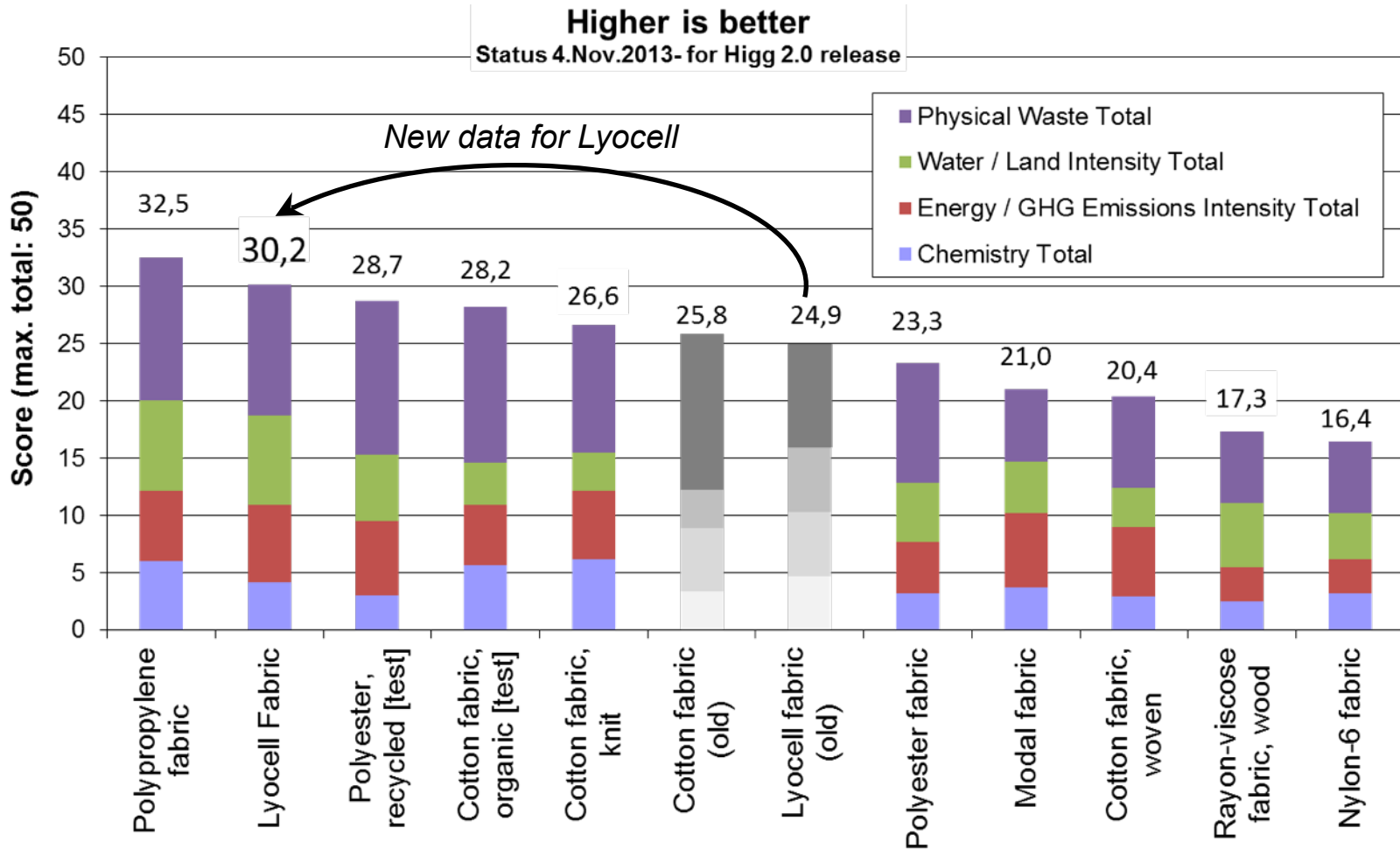
Monitoring new methods to access water-footprint or bio-diversity.

Life Cycle Analysis for more sustainability

Relative environmental load per ton of fiber



MSI scores of selected textile materials



Lenzing's core business:

Man-made cellulosic fibers

Textile Fibers



Fashion



Home textiles



Technical applications



Functional applications



Advantages

High strength
Softness
Comfort through breathability
Ideal blending partner for cotton & polyester

Nonwoven Fibers



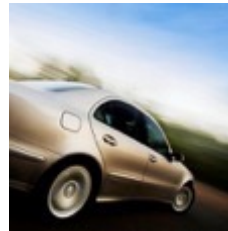
Wipes



Hygiene



Medical applications



Technical applications



High strength
Absorbency
Purity
Softness
Sustainable Certifications

Certificates, Eco-Labels and Awards

- VÖNIX (Austrian Sustainability Index)
- The European Eco-Label (European Flower)
- Responsible Care
- Oeko-Tex Standard 100
- European Award for the Environment
- PEFC (Chain of Custody)
- FSC (Chain of Custody)
- Compostable (Din Certco, Vincotte, US BPI)
- Home compostable (Vincotte)
- Biodegradable (Vincotte)
- ECOCERT ERTS (Standard TENCEL)
- USDA Biobased (TENCEL und Lenzing FR)
- Food contact compliance
- etc.



Responsible Care
Verantwortung hat Zukunft





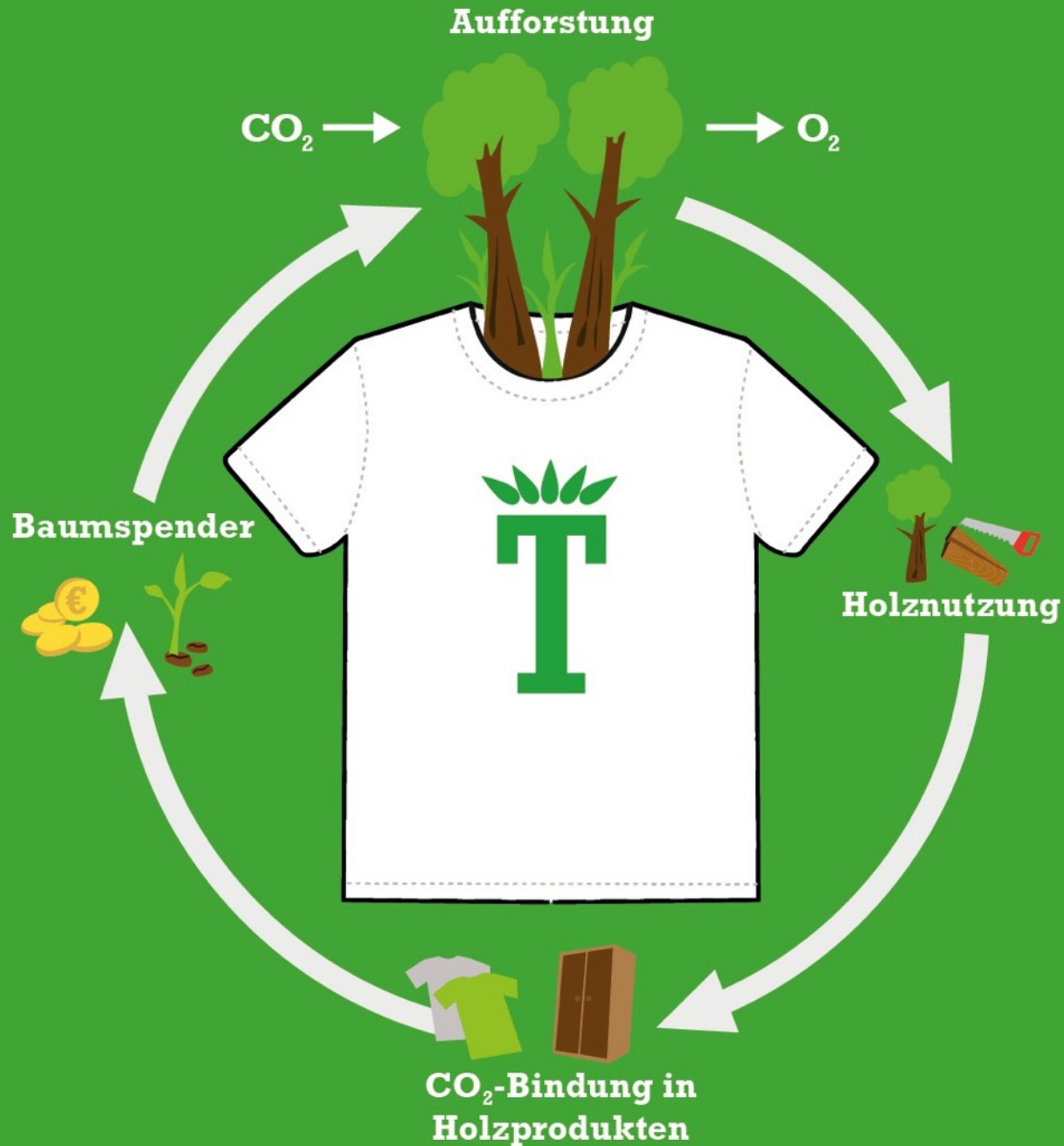
Using Wood is Good



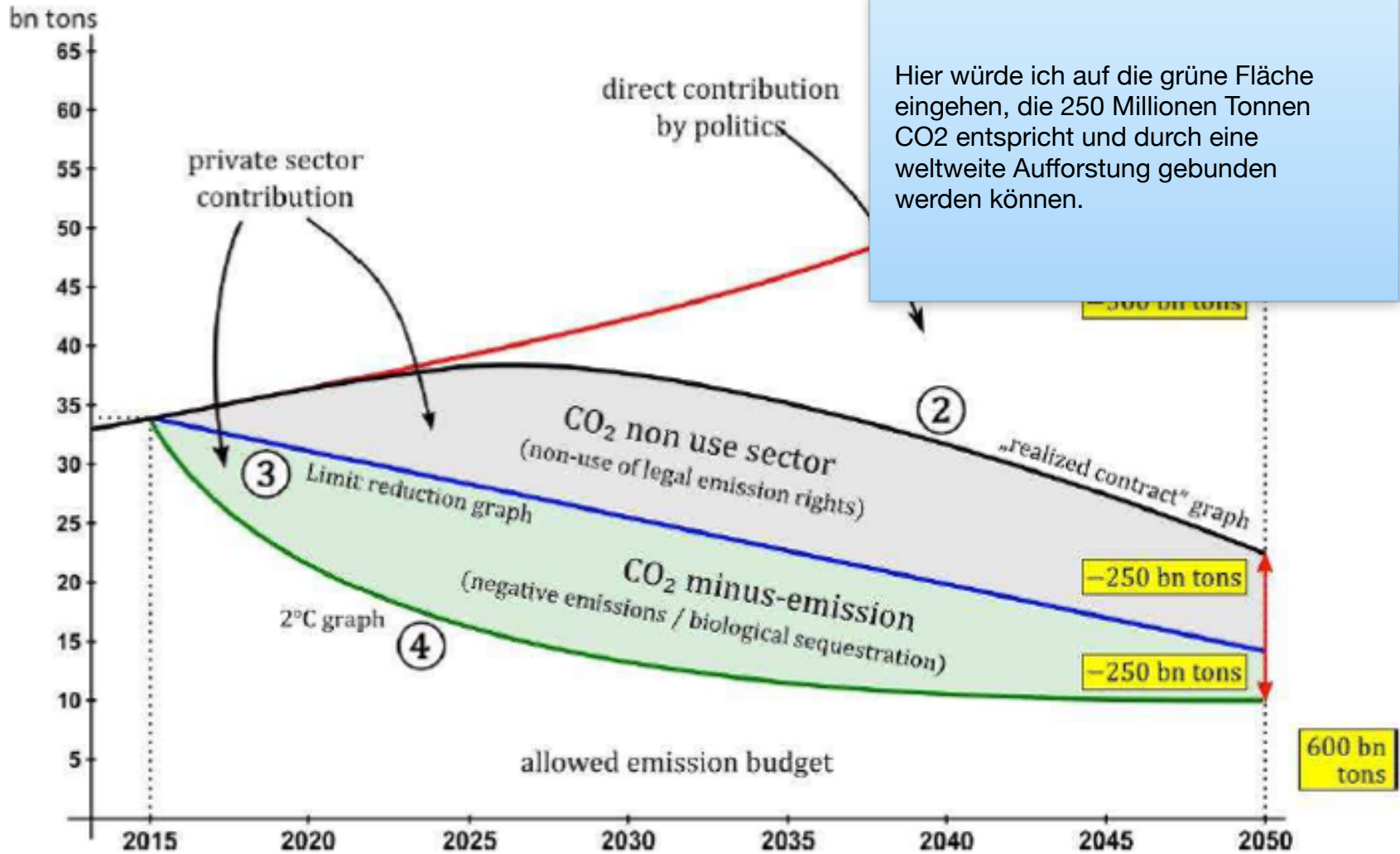


Plant-for-the-Planet

The children's initiative For Climate Justice



Current CO2 Situation



**LABEL
INSIDE THE
SHIRT.**

TREE-SHIRTS

Stop talking. Start wearing.

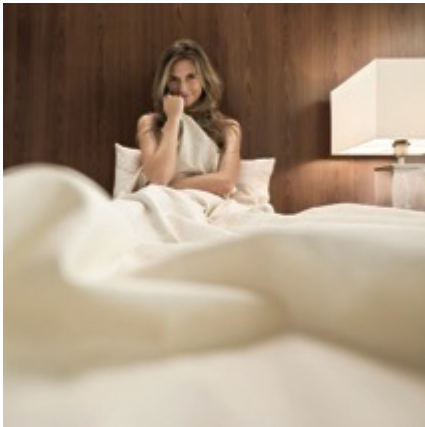
www.plant-for-the-planet.org

SIZE XL

30°   100% Tencel®



Thank you for your attention!



Univ. Lect. Mag. Lorenz Wied MBA

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LEADING FIBER INNOVATION

Using Wood is Good

