

The Lenzing logo consists of the word "Lenzing" in a bold, white, sans-serif font, positioned above a thick, green, horizontal line that curves slightly upwards at the right end.

Innovative by nature

Innovative by nature

**The key role of biorefineries in the sustainability
strategy of the Lenzing Group**

Dr. K. Christian Schuster
November 22nd, 2018

Lenzing's biorefinery concept is at the core of our strategy

sCoreTEN

Lenzing's mission statement

“Lenzing is a performance materials company that turns CO₂ and sunlight into highly functional, emotional and aesthetic products across the globe”

Sustainability positioning

- As a key corporate value
- Innovation and growth driver
- As a key brand value
- Cornerstone of employee engagement
- An enabler to drive change through partnerships

Mega trend - Sustainability is gaining importance

Less than 1% of global water resources is available as fresh water for people

- But water consumption is rising due to population growth and changing consumption habits



Arable land is decreasing due to erosion and urbanization

- With a growing global population, this intensifies the competition for farm land

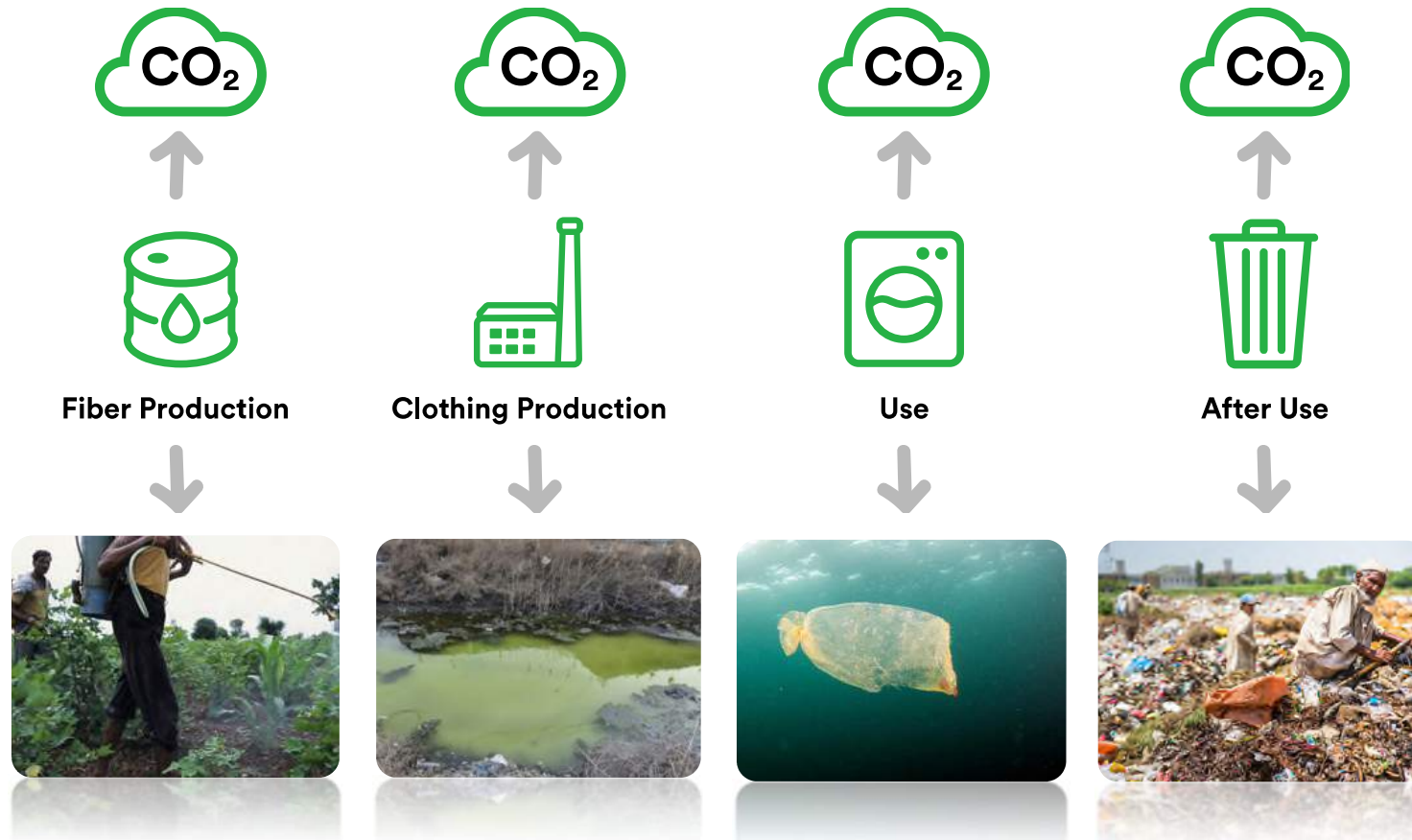


Oil is a finite resource causing negative externalities

- Sooner or later “peak oil” will be reached
- New sources can only be tapped by taking high ecological risks



Textile industry has serious issues



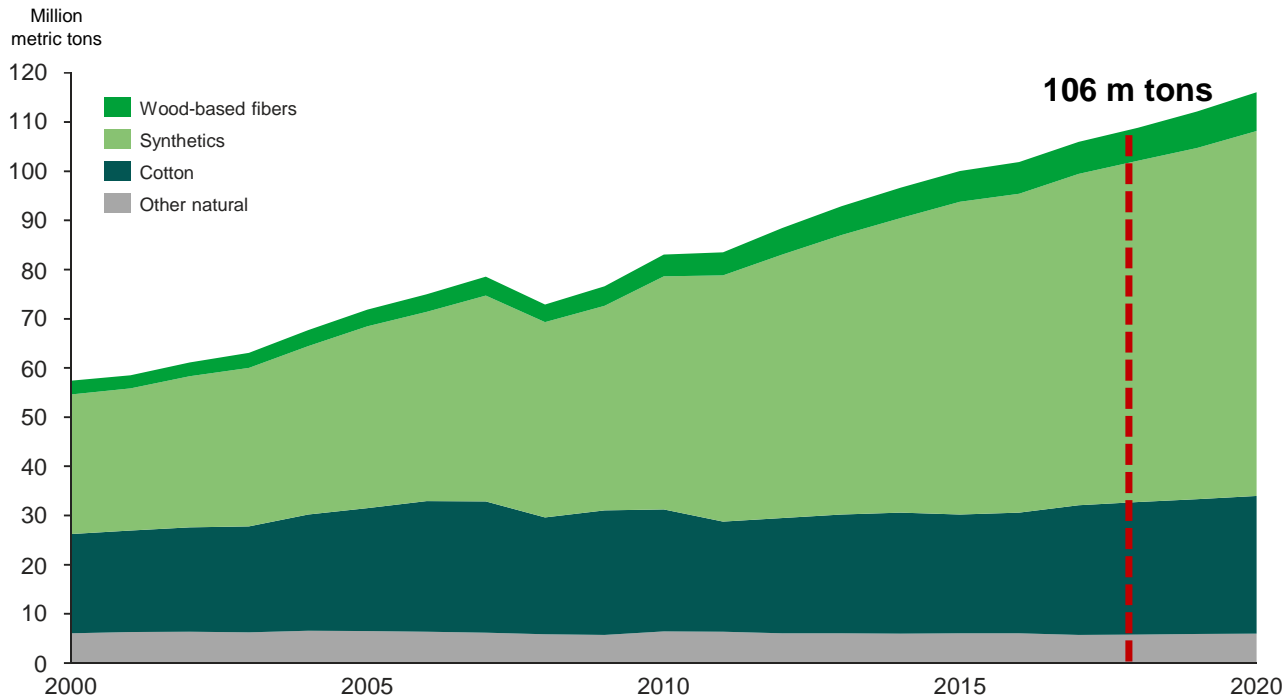
Source: A new Textiles Economy: Redesigning Fashion Future: Ellen MacArthur Foundation

www.lenzing.com

4/11/2018- 4

Fiber demand growing at 3-4 % p.a.

Expected growth of global fiber demand until 2020



**CAGR
(2015e – 2020p²)**

● Wood-based fibers¹ (6%)

5-6% p.a.

● Synthetic fibers (64%)

3-4% p.a.

● Cotton (25%)

1-2% p.a.

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Total fiber market

3-4% p.a.

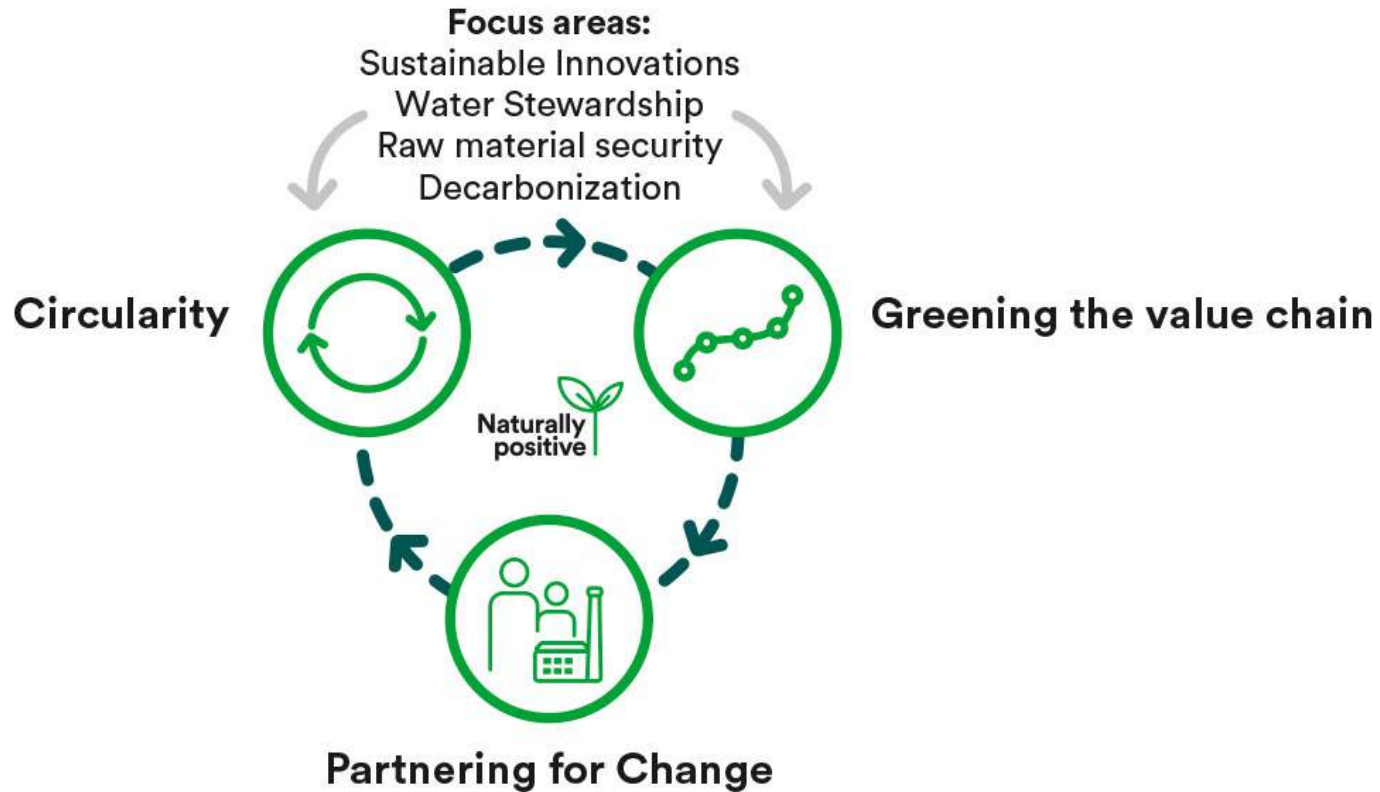
¹ Wood-based and cotton linter-based cellulose fibers - Viscose, Modal, Lyocell and other (acetate, cupro) both staple fiber and filament

² Projected

Sources: ICAC, The Fiber Year 2018, Lenzing data

Lenzing's Sustainability Strategy

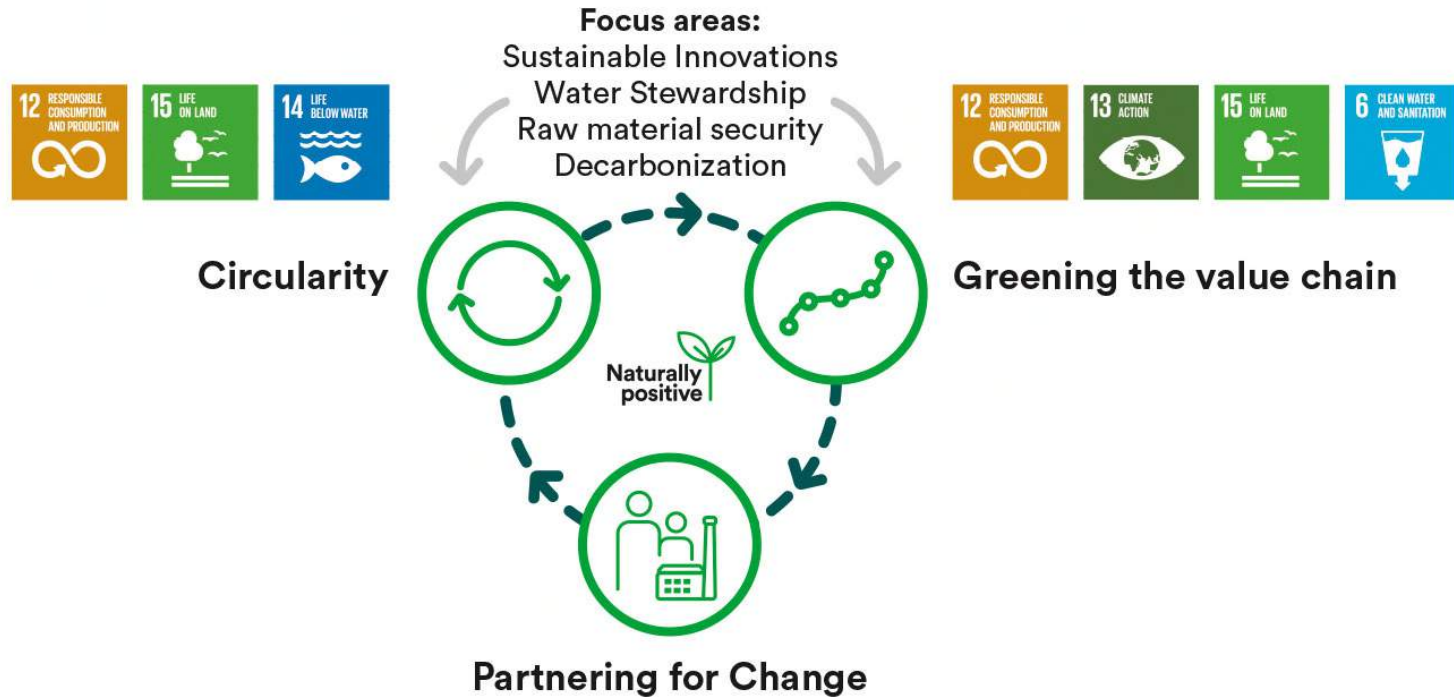
Naturally Positive



Focus areas:
Partnering for systemic change, Empowering people, Community wellbeing

Lenzing's Sustainability Strategy

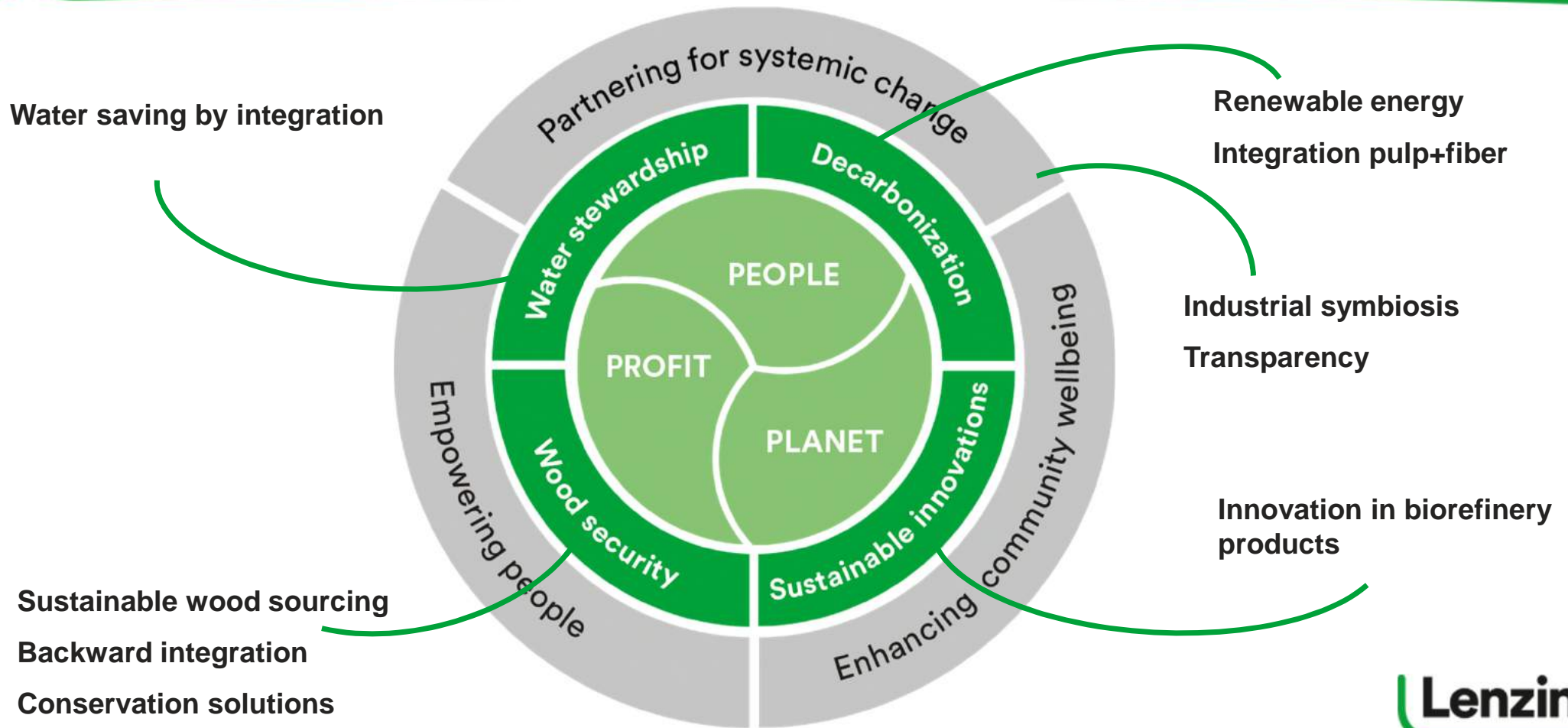
and how it relates to the UN Sustainable Development Goals



Focus areas:
Partnering for systemic change, Empowering people, Community wellbeing



Lenzing's Sustainability Strategy and Biorefineries



Renewable raw material wood

- The raw material for Lenzing fibers is dissolving wood pulp from beech, spruce, eucalyptus and several other types of wood
- 2–3% of industrial pulp produced worldwide is used by the fiber industry
- Dissolving wood pulp has specific requirements compared to paper pulp

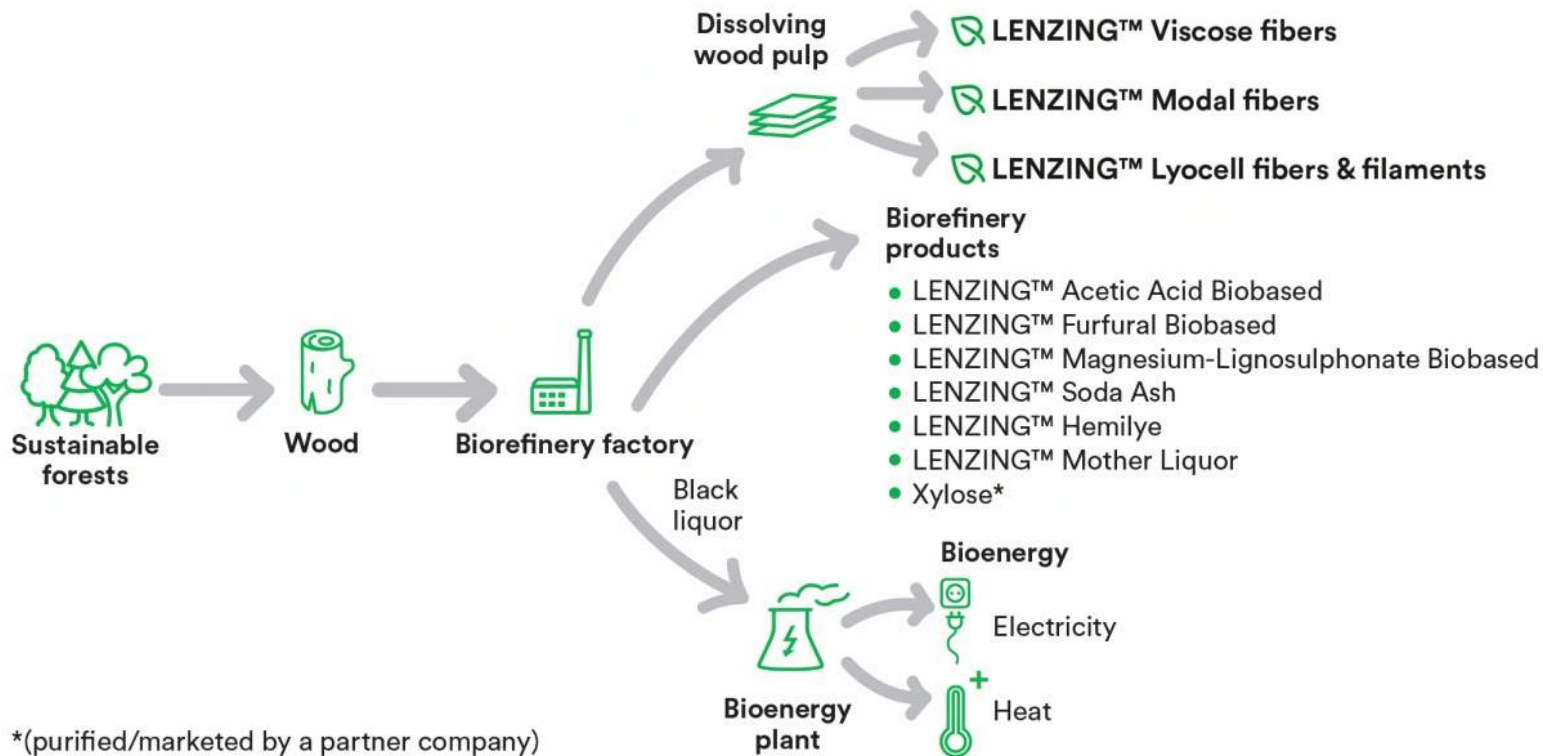


Responsible wood and pulp sourcing

- Lenzing has a strict wood and pulp sourcing policy in place
- Lenzing does not source any wood or dissolving wood pulp from ancient and endangered forests as well as high conservation value areas.
- Lenzing is committed to sourcing wood and dissolving wood pulp exclusively from non-controversial sources.
- All Lenzing production sites are FSC® (Chain of Custody) certified.
- The wood processed in Lenzing (Austria) and Paskov (Czech Republic) is procured by a team of experts who are educated and well-trained foresters with reliable long-term relationships to the suppliers.

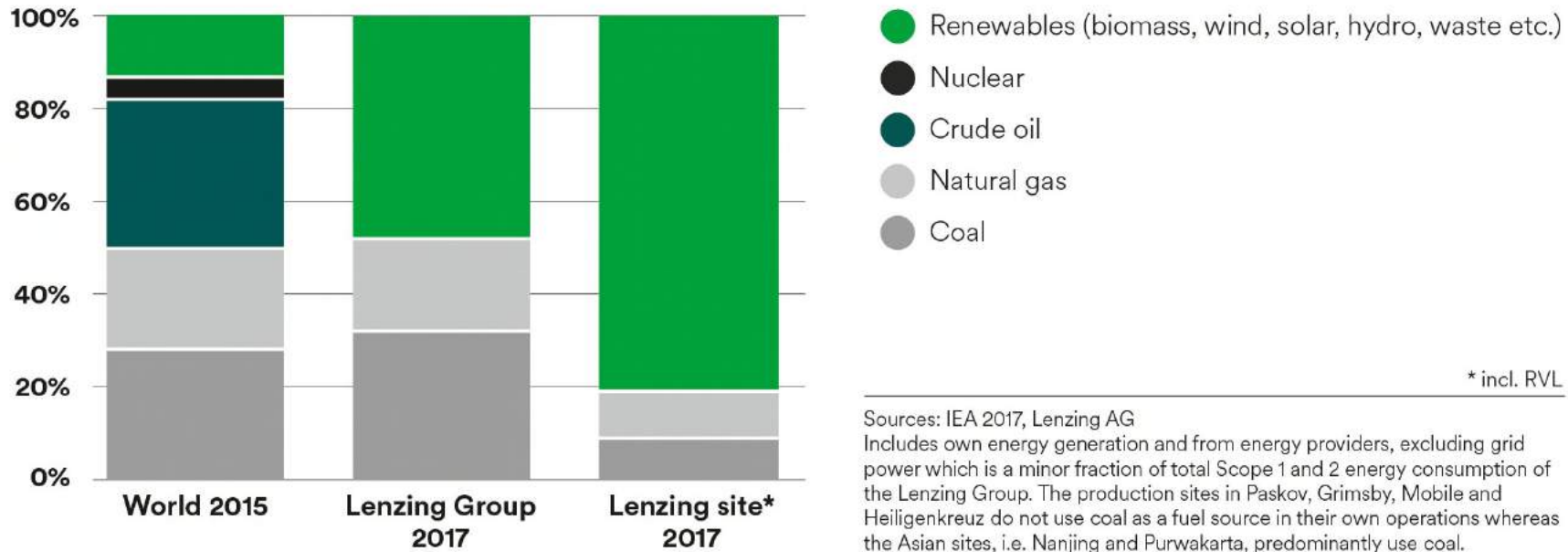


The biorefinery concept in Lenzing, Austria



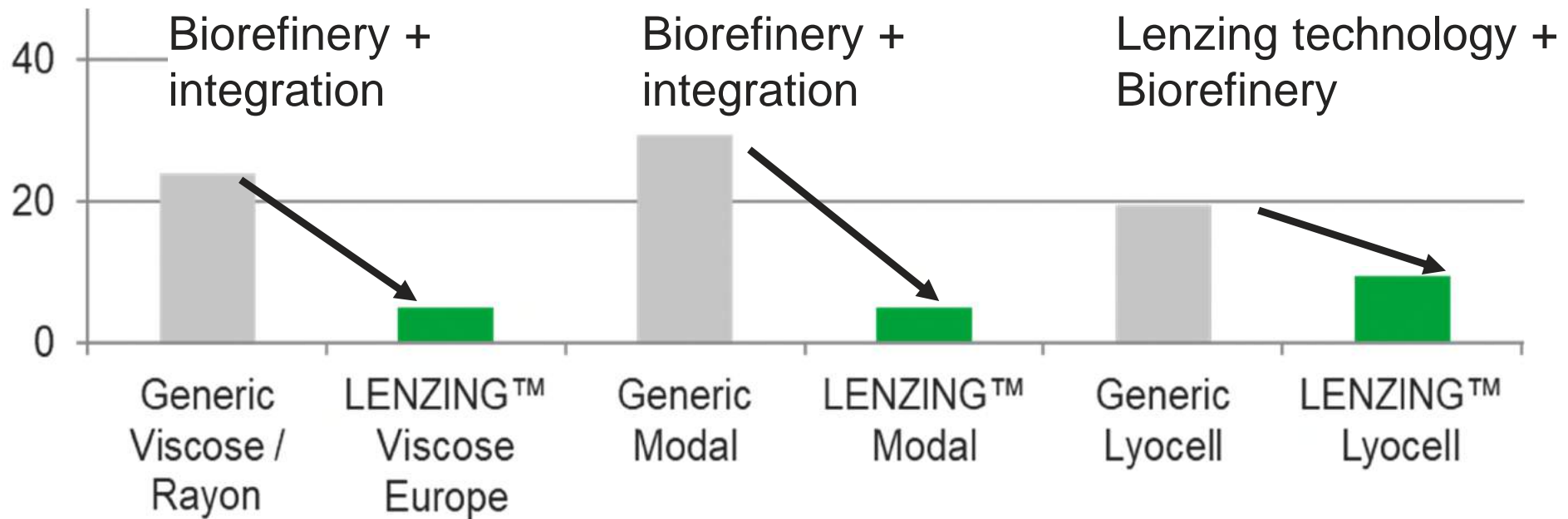
Lenzing Group: 50% renewable energy

Energy sources of the world, Lenzing Group & Lenzing site*



LENZING™ fibers are best-in-class

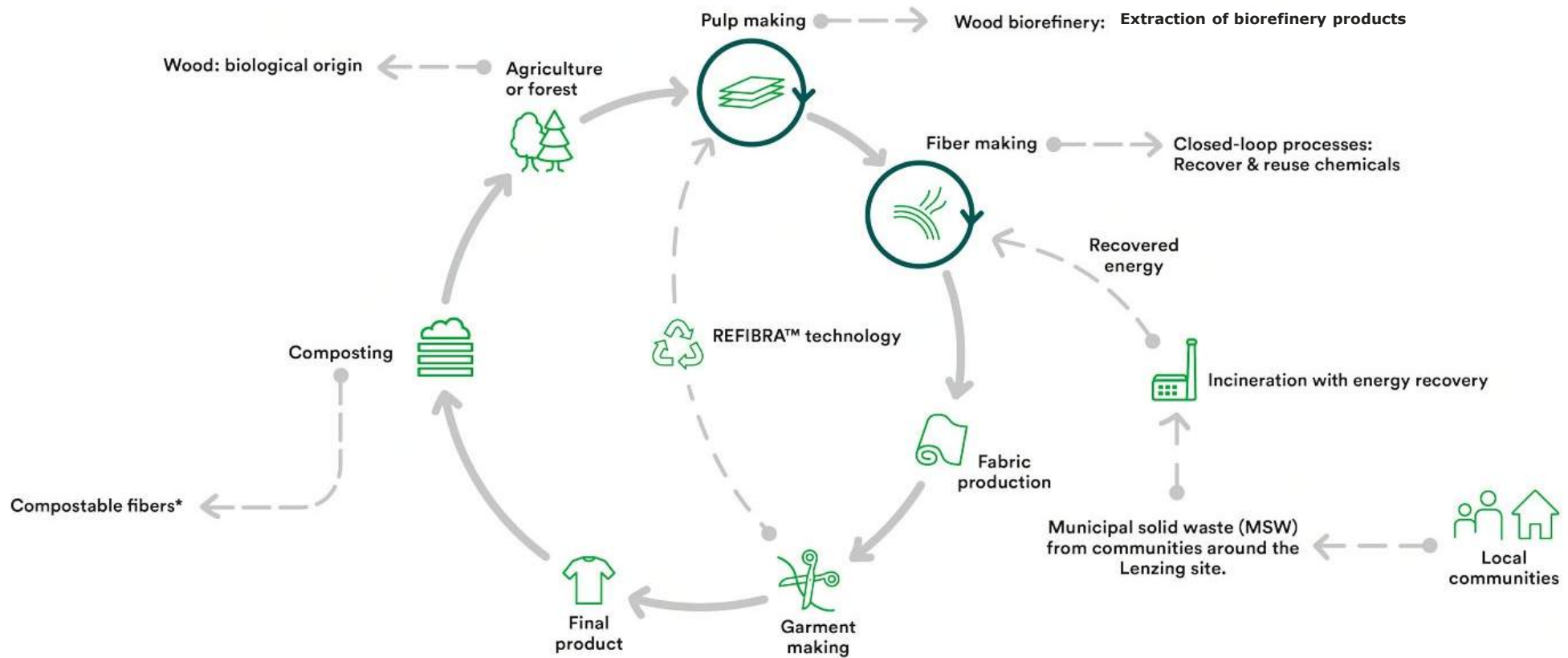
Higg MSI Total score by Sustainable Apparel Coalition



Source: Higg MSI Scores/own calculation

Developed by the Sustainable Apparel Coalition, the Higg Index is a suite of tools that enables brands, retailers, and facilities of all sizes — at every stage in their sustainability journey — to accurately measure and score a company or product's sustainability performance. The Higg Index delivers a holistic overview that empowers businesses to make meaningful improvements that protect the well-being of factory workers, local communities, and the environment.

Circular economy – a systemic change



* All standard fibers from Lenzing are compostable and biodegradable in marine and soil conditions. However, the compostability of textile and nonwoven products depends on the material composition (fiber blend) and processing in the value chain steps.



Biorefineries at the core of Lenzing Group's sustainability

Circularity

- Renewable raw material base – wood from sustainable forests and plantations
- Products from the biodegradable polymer cellulose replacing plastics

Greening the value chain

- Energy integration and biorefinery product utilization leads to low footprint of products compared to alternatives

Partnering for systemic change

- Industrial symbiosis – waste of one company is raw material for another company
- Transparency
- Willingness to co-operate. Only joint effort brings progress and success
- What are the needs in terms of financing and capital to address the technological and business challenges related with developing biorefinery further?

Thank You

**for your
attention!**