



Climate Action Plan

Lenzing's transition to a
net-zero world by 2050

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Introduction to the climate transition plan

Climate change plays a crucial role in Lenzing's sustainability strategy. **In 2019, the Science Based Target initiative approved Lenzing's science-based target for 2030 and paved way to our ambition to become net-zero by 2050.** Immediately, we established the governance with CEO sponsorship and started implementation at the group level.¹

In this presentation, we provide topics relevant for our climate transition plan, starting from our targets, emission sources and our planned implementation with different levers and by integrating them in different functions. We also present an evolving roadmap based on our existing action plans based on current knowledge.

We appreciate your feedback to further improve our actions.

Thanks for your engagement!



We improve products to have lower footprint to support our customers and consumers to keep the momentum and make progress. In 2020, we launched carbon neutral products with lowest CO₂ footprint in their category and offset unavoidable emissions with verified carbon reduction projects while reducing our scope 1, 2 and 3 emissions continuously.

We periodically engage different stakeholders to improve the state of the industry and influence policy makers which are aligned with our commitment to the Paris Agreement.

This plan is a work-in-progress and we are improving continuously based on the market context, new technologies and evolving legislations globally. Therefore, our plans may change based on the circumstances. However, **our resolve to reach net-zero by 2050 latest** is the same.

Climate change | Undeniable threat to our entire civilization



The effects will be catastrophic unless we act now!

Climate change is a global challenge that affects everyone – governments, companies, every person as an individual. To avoid the fatal impacts of climate change and hold the **global warming below 1.5°C**, science demands that greenhouse gas emissions must urgently peak, and reduce down to zero by 2050. Transparency and reporting are necessary for sound decision-making. World's industry must start the transformation now and not wait for perfect solutions to fall from sky.



[Goal 13: Climate action - The Global Goals](#)
[Sustainable Development Goals - CDP](#)



Risks & opportunities for Lenzing and response

A **group-wide TCFD assessment** process implemented in 2020 and further developed since then. There are two different categories of risks underlying the TCFD recommendations. On the one hand, there are **political, legal, technological and market risks, known as “transition risks”**.¹

On the other, there are **acute and chronic risks, known as “physical risks”**.² Transitional risks arise from transitioning to a low-carbon economy (e.g. regulatory changes), whereas physical risks are environmental risks leading to negative acute or chronic impacts on a company (e.g. water scarcity).

	Key risks/opportunities ³	Lenzing’s response
Transition risks	Emerging regulations on carbon pricing	Lenzing set a science-based target and reduce emissions continuously
	Increased biomass costs	Lenzing started-up a modern dissolving wood pulp plant in 2022 with integrated forest plantation and pulp operations in Brazil
	Reputational risk in the textile sector	Lenzing proactively discloses information details on its business practices and environmental footprint
Physical risks	Chronic physical climate risks	Lenzing’s Group Policy for Safety, Health, and Environment outlines a clear roadmap to ensure no accidents cause harm or damage to people or the environment.
Transition opportunities	Increased demand for low-emission products and product innovation	Lenzing has embarked on an ambitious growth strategy to benefit from expected higher demand for responsibly resourced/low-emission products.
	Decarbonization strategy de-risks operations	Lenzing’s decarbonization strategy is based on reducing its emissions, not offsetting them

1. Introduction

¹ Transition risks are calculated according to the IEA 2DS scenario.

² Physical risks are calculated using the SSP2 RCP6.0 pathway.

³ Not exhaustive list.

Lenzing's Sustainability Strategy „Naturally positive“



Our sustainability vision

Our passion is to provide truly sustainable solutions for a growing world. We create a positive impact for the people we work with, the consumers we serve, and the society and environment in which we operate. In doing so, we are commercially successful.



Our sustainability mission

We are change agents and collaborate with our suppliers and value chain partners to catalyze change for the better. We actively contribute towards improving environmental performance throughout the value chain and, consequently, in final products. We promote social wellbeing. Creation of more positive impacts and benefits is the guiding light for our innovation and business practices.



Our opportunities

In the textile industry, from a brand/retailer perspective, **more than 90% of carbon emissions come from scope 3** i.e. upstream **textile value chain**¹; a big opportunity for Lenzing to support its customers to reduce their emissions. Use of **circular economy** can drive down GHG emissions further.

2. Lenzing's sustainability strategy

Basis for science-based carbon reduction targets

Driven by...



Founded by...

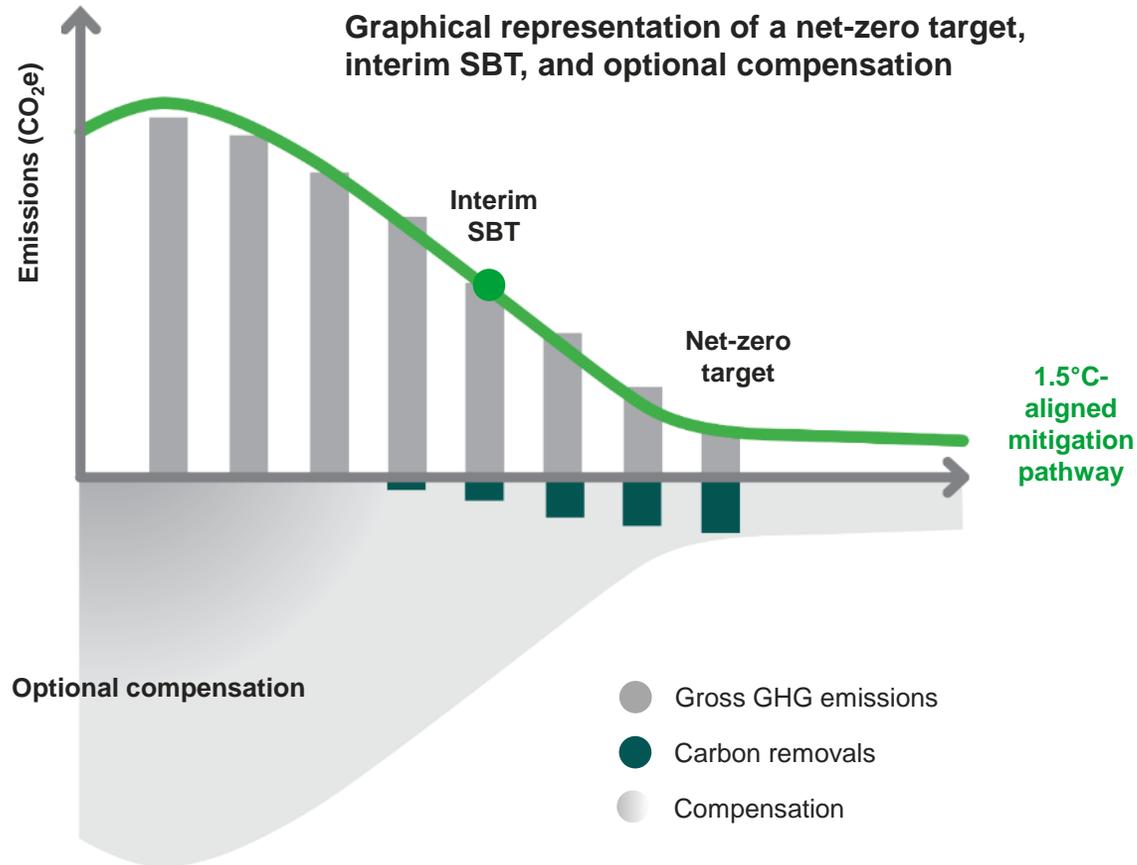


Supported by...



Science-based target (SBT) approach to net-zero emissions

Role of carbon removals in Lenzing's Climate Action Plan

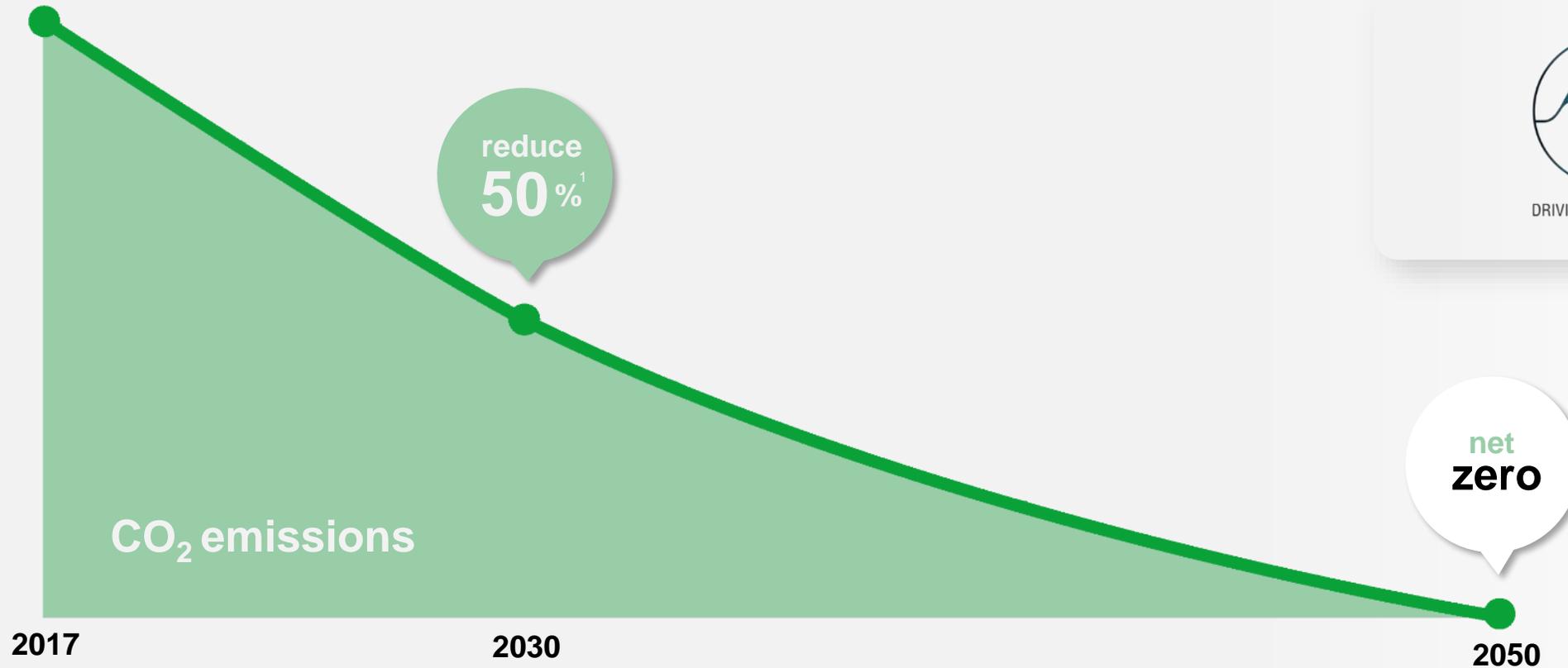


What does science say to be inline with the 1.5°C Paris Agreement?

- Reduce your absolute GHG emissions by approx. 50% till 2030
- GHG reduction has to be an absolute reduction not an intensity reduction!
- Net-zero by 2050 latest
- Net-zero means at least 90% absolute reduction – max 10% removal offsets (afforestation, technical solutions like CCS) are allowed – our planet is too small for higher offset shares

Lenzing's approved science-based target

Lenzing is the first wood-based cellulose fiber producer with the target

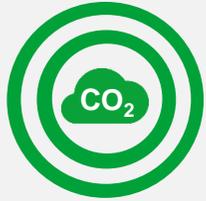


3. Lenzing SBT

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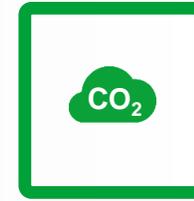
¹ Reduction of specific CO₂ emissions for products sold (pulp and fiber) by 50% until 2030 compared to baseline 2017.

Lenzing is the first cellulose fiber producer to set an approved science-based target in 2019



Define and commit to targets

- To reduce scope 1, 2 and 3 GHG emissions 50 percent per ton of fiber and pulp sold by 2030 (baseline 2017)¹
- To achieve net-zero GHG emissions (Scope 1, 2 and 3) by 2050²
- Corporate strategy target: To reduce GHG emissions 40 percent per ton of fiber and pulp sold by 2024 (baseline 2017)



Set up the right framework

- Governance – a cross-functional project team under the CEO
- Strategy, targets, and roadmaps
- Integration in functions and projects
- Monitoring and reporting
- Business value

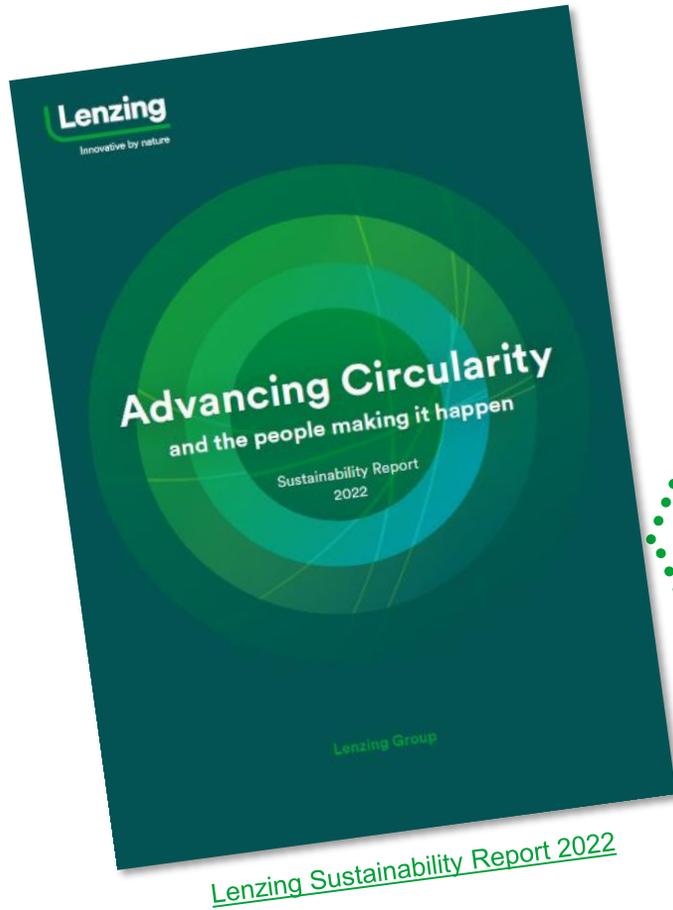
3. Lenzing SBT

www.lenzing.com

¹ The validated mid-term target for 2030 is set as a 2°C target and currently being updated to a 1.5°C target for scope 1 & 2 and a well-below 2°C target for scope 3.

² The net-zero target refers to 1.5°C and will be complemented by a long-term science-based target for scope 1, 2 and 3 aiming minimum of 90% reduction until 2050 and will be validated by SBTi.

Sub-targets to reach GHG reduction targets



3. Lenzing SBT

www.lenzing.com

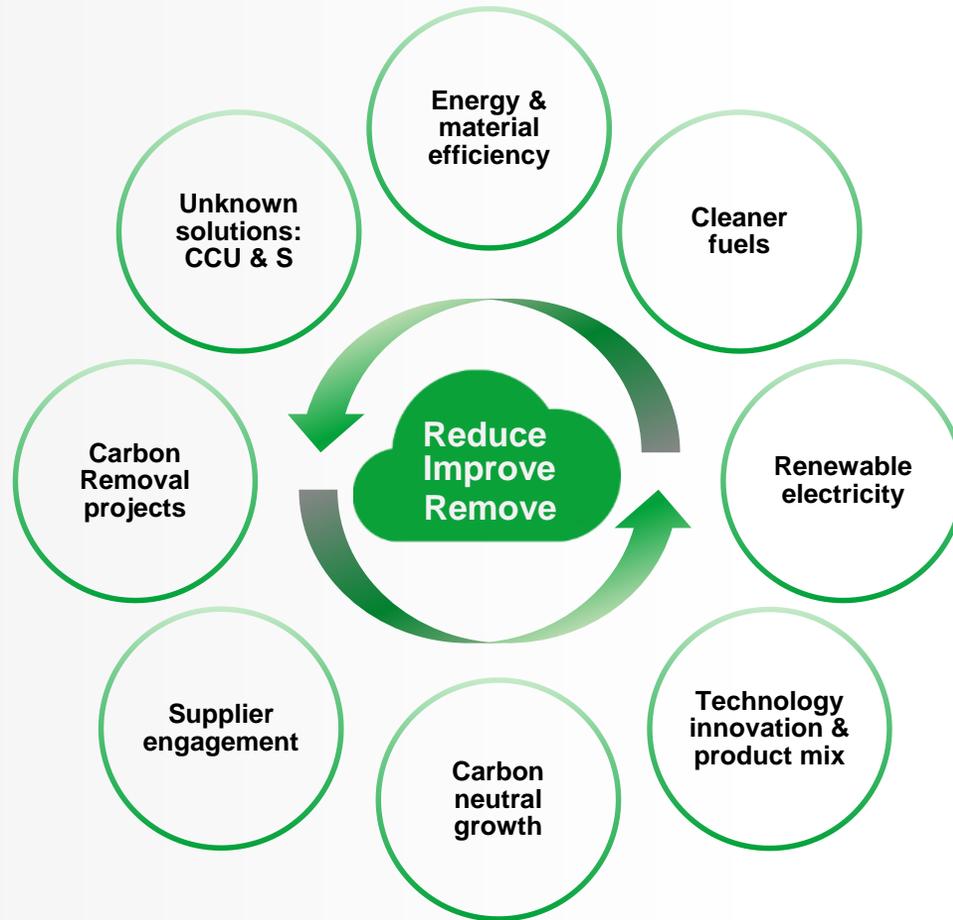
Target	Measure(s)	Year	Weight
Target 14	To reduce scope 1, 2 & 3 (purchased goods and services, upstream and downstream transport, and fuel and energy-related activities) greenhouse gas emissions by 50 percent per ton of fiber and pulp sold by 2030 (baseline 2017)	2030	7, 13
	Lenzing reduces 40 percent of specific CO ₂ emissions per ton of product sold ^{b,e}	2024	
	Lenzing reduces 50 percent of specific CO ₂ emissions per ton of product produced ^a	2027	
Progress made in 2022	Lenzing maintained its approach towards mitigating climate change by reducing its GHG emissions compared to baseline 2017. Detailed information on achievements in 2022 is available in the "Climate & energy" chapter.		
Target 15	To achieve net-zero CO ₂ emissions by 2050 (scope 1, 2 & 3)	2050	7, 13
	Lenzing achieves 100 percent green electricity for four sites	2024	
	Lenzing phases out coal in its Nanjing (China) operations	2022	
	Lenzing installs on-site photovoltaic power generation at the Lenzing plant	2022	
	Lenzing increases the share of renewable energy consumed by the Lenzing Group and supplies excess bioenergy from the pulp production facility in Indianópolis (Brazil)	2023	
	Lenzing achieves scope 1 & 2 carbon neutrality at its new lyocell fiber production site in Prachinburi (Thailand) by using 100 percent bioenergy	2023	
	Lenzing engages 20 key suppliers, by spend and CO ₂ impact, in order to reduce Lenzing's scope 3 emissions and incentivize the suppliers that help Lenzing offer more low-carbon-footprint fibers	Continuous	
	Lenzing engages and enables 50 percent of 'customers with approved SBT and commitment' (textile and nonwoven brands/retailers as well as manufacturers working with LENZING™ fibers) to fulfill their ambition by providing information on low GHG-footprint specialty products such as TENCEL™, LENZING™, ECOVERO™ and VEOCEL™ branded fibers	Continuous	
Progress made in 2022	Lenzing runs a campaign to reach 50 percent of TENCEL™ and VEOCEL™ customers (textile and nonwoven brands/retailers as well as manufacturers using the TENCEL™ and VEOCEL™ brands) to promote the use of innovative carbon-zero TENCEL™ products and climate care VEOCEL™ products		
Progress made in 2022	Lenzing has commissioned the largest ground-mounted photovoltaic system in Upper Austria, which is expected to provide 5,500 MWh annually. This is expected to cut CO ₂ emissions by some 4,400 tons per year. The transition to solely renewable electricity in Nanjing (China) is underway and expected to be completed in 2023. Phasing out coal in Nanjing (China) is ongoing, however the project was delayed due to long negotiations with gas stakeholders such as infrastructure and supply and the strict COVID-19 restrictions in China. The targeted carbon neutrality in (Prachinburi) Thailand was achieved in 2022. For more information, please see the "Climate & energy" chapter.		

Color code status

On track
Achieved
Delayed
New target

Measure(s)

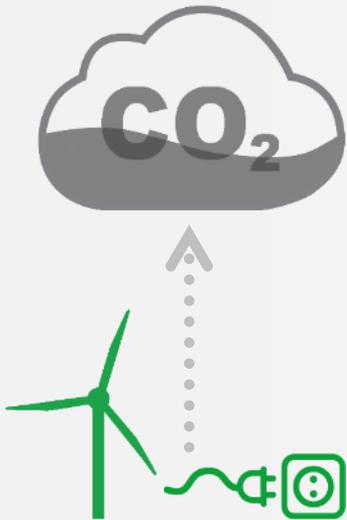
Levers towards carbon reductions and net zero



Understanding where GHG emissions come from

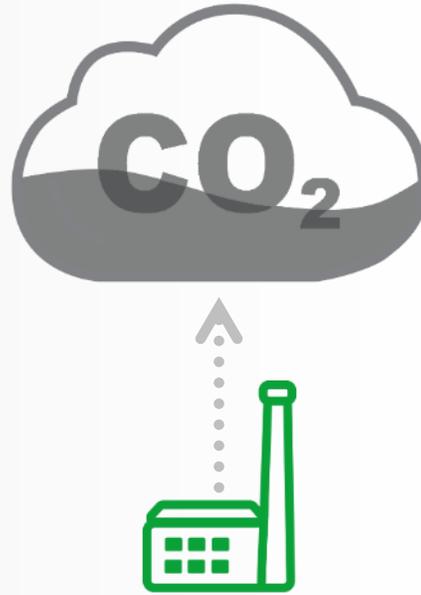
is the first important step

SCOPE 2
indirect emissions ~13%



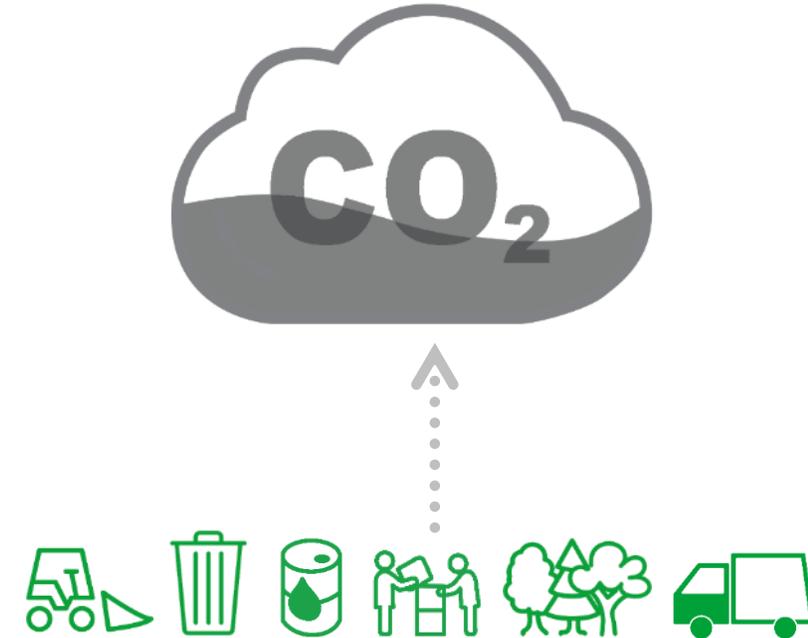
Off site emissions from purchased electricity, heat, steam or cooling for own use

SCOPE 1
direct emissions ~34%



On site emissions for manufacturing, transportation, energy

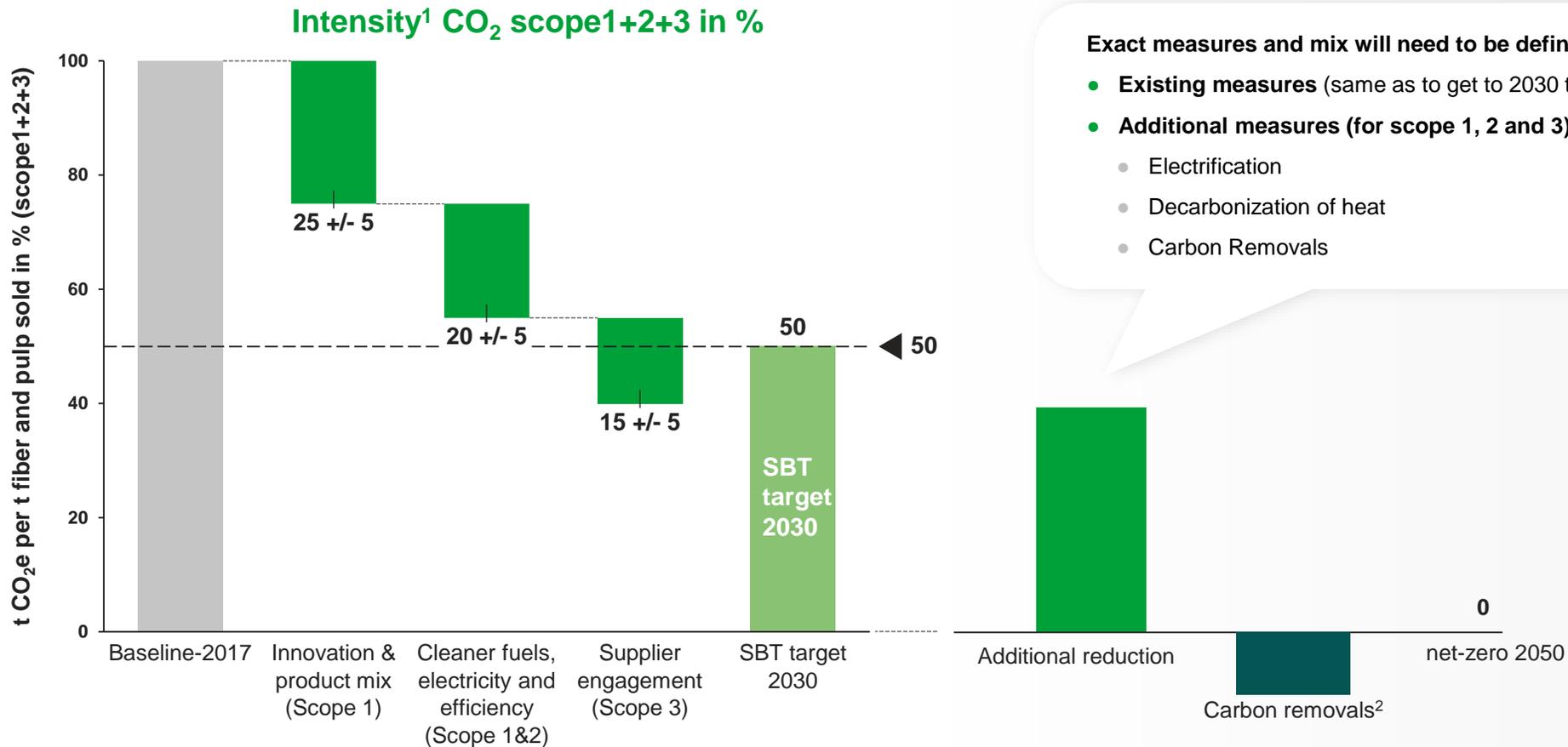
SCOPE 3
indirect emissions ~53%



Purchased goods (raw materials), waste treatment, business travel, transportation (shipping/logistics)

4. Roadmap: Scopes, levers & activities

Lenzing's CO₂ reduction roadmap for 2030 and 2050



4. Roadmap: Scopes, levers & activities

Carbon reduction examples by operations



First on-site **photovoltaic plant** at HQ commissioned



Annual electricity production will amount to 6,000,000 kWh, which is expected to cut CO₂ emissions by some 4,400 tons per year.

4. Roadmap: Scopes, levers & activities

www.lenzing.com



One facility **transforming from coal to natural gas**

Switching from coal to natural gas in our viscose plant in Nanjing by 2024.
(~50% reduction = ~200,000 tons less CO₂/year)

Carbon-neutral growth projects

Nanjing
(China)



Pulp mill in Indianópolis (Brazil) is the **largest of its kind**



Pulp production at joint venture LD Celulose in Brazil feeds more than 50% of excess energy into the public grid as bioenergy (when running full capacity).



World's **largest lyocell fiber plant** opened in Prachinburi (Thailand)

TENCEL™ Lyocell plant in Thailand is designed to be supplied with 100% sustainable bio-energy.

4. Roadmap: Scopes, levers & activities

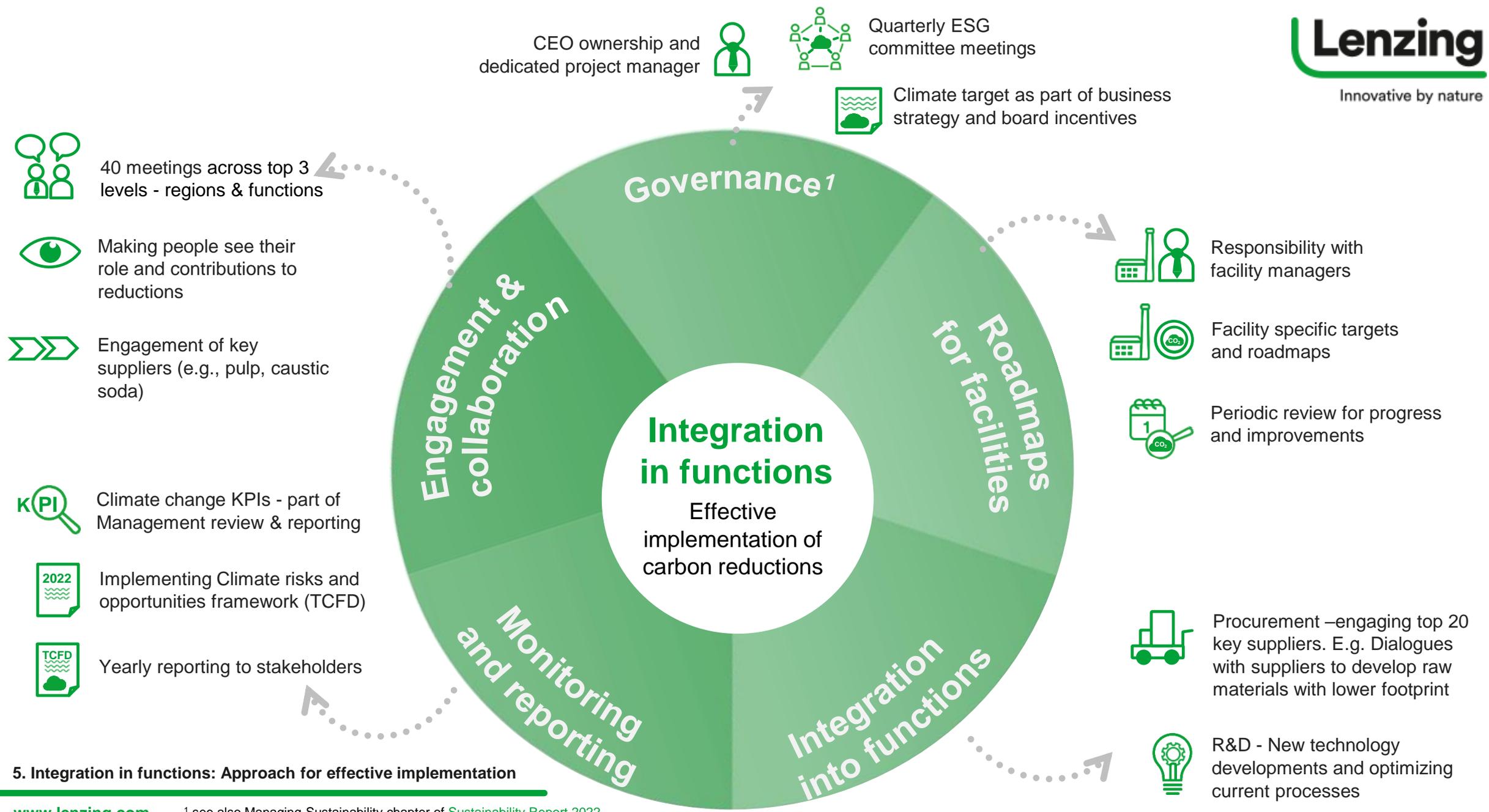
www.lenzing.com

Lenzing
Innovative by nature

Need for 'Orchestration of change'

We built blocks for effective implementation of carbon reductions.





5. Integration in functions: Approach for effective implementation

Integration of decarbonization creates business value

Generate new revenue stream

Launch of innovative products

Create long lasting partnerships throughout supply chain

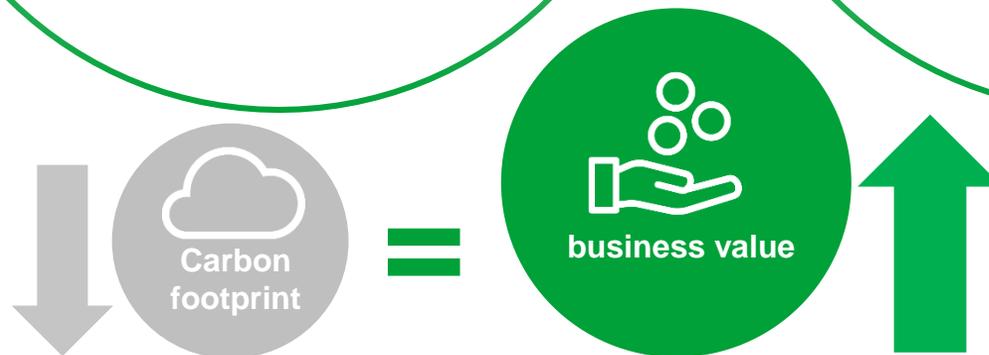
Attracting new and impact investors

500mn EUR green bond linked to sustainability performance

And another hybrid bond of 500mn EUR

5. Integration in functions: Approach for effective implementation

www.lenzing.com



Net-benefit thinking:

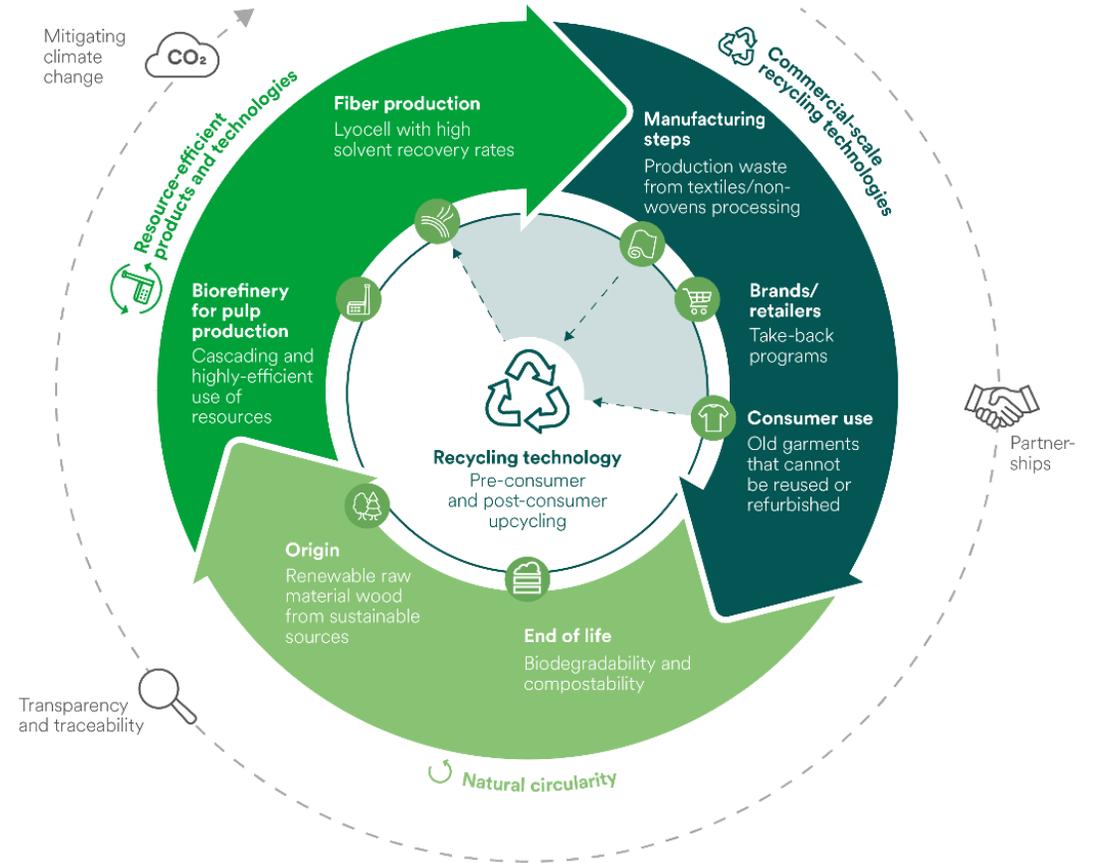
Low carbon products and beyond

Lenzing's net-benefit products...

... offer **positive impacts and benefits** to environment, society, and value chain partners, which are better than most competing alternatives in the market.

... take a **life-cycle perspective** and thus include both upstream and downstream value chain processes.

... contributed **73.7 % to the revenue** in 2022 (from 72.5 % in 2021)



Net benefit products with quantifiable sustainability benefits

Independently verified and can be found in 3rd party databases



**LENZING™
Acetic Acid
Biobased**

85% less GHG emissions*



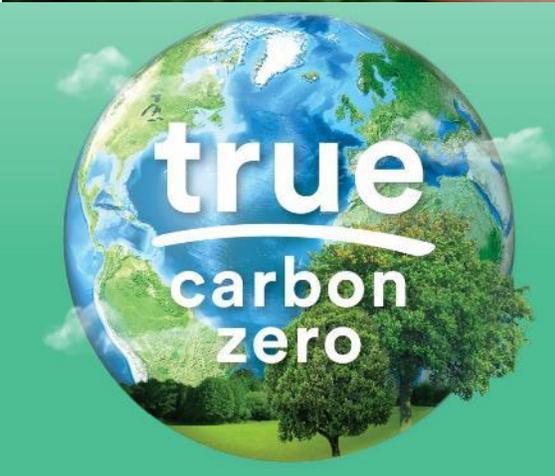
**LENZING™
ECOVERO™ &
VEOCEL™
Specialty
Viscose**

50% reduction* of GHG emissions and water impact



**TENCEL™
Luxe filament**

avoids impacts from yarn spinning (~28% of GHG emissions from fabric production)



**TENCEL™
carbon-zero &
VEOCEL™
climate care**

lowest carbon footprint* and compensation of remaining emissions



**REFIBRA™
& Eco Cycle
technology**

upcycling of cotton textile scraps



**LENZING™
Web
Technology**

avoids impacts from conventional non-woven production

6. Our low carbon products

www.lenzing.com

* compared to generic product of the same type

Our new products with lowest carbon footprint in their category

Textiles and nonwovens have different campaigns and brand names



The graphic features a green background with a central image of a globe. The globe is partially covered by a lush green forest. The text 'true carbon zero' is overlaid on the globe in white, with 'true' in a larger font and 'carbon zero' below it. Above the globe is the Tencel logo and the tagline 'Feels so right'. Below the globe is the text 'carbon-zero TENCEL™ fibers' and '© 2021 Lenzing AG'.

Tencel™
Feels so right

true
carbon
zero

carbon-zero TENCEL™ fibers

© 2021 Lenzing AG

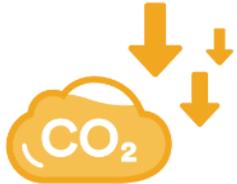


The graphic features a light blue background with a central image of a globe. The globe is covered in a lush green forest and surrounded by various animals including giraffes, elephants, and birds. The text 'climate care' is overlaid on the globe in white, with 'climate' in a larger font and 'care' below it. Below the globe is the Veocel logo and the tagline 'Purely for you'.

climate
care

Veocel™
Purely for you

We offer carbon-neutral products. How does it work?



reduce

Our priority is the continuous reduction of carbon emissions through more efficient production methods, using renewable energy sources and embracing new technologies.



engage

Being the first cellulosic fiber producer to commit to the Science Based Targets initiative, we engage and steer the industry to source materials with low carbon footprints and reduce overall carbon emissions.



offset

We offset unavoidable carbon emissions by supporting verified global carbon reduction projects.



6. Our low carbon products

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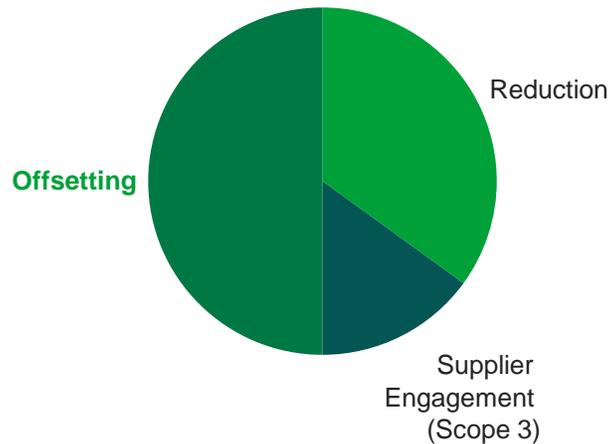


Our approach with offsetting

For carbon neutral fibers, Lenzing's decarbonization targets reduce the need for offsetting

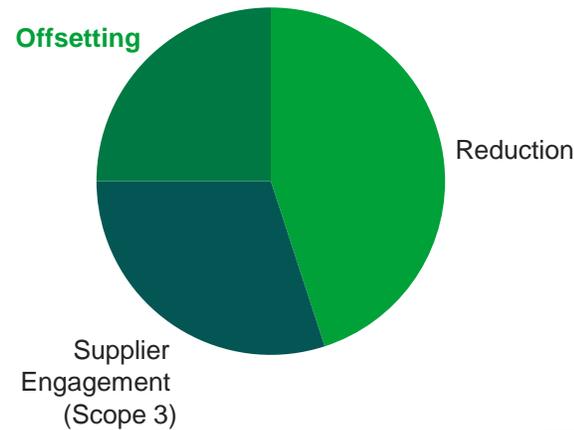
2022

Currently, offsetting plays a key role to create carbon neutral TENCEL™ and VEOCEL™ fibers when compared with a 2017 carbon footprint baseline. Compared to generic fiber types, footprints have been decreased by ~60%.



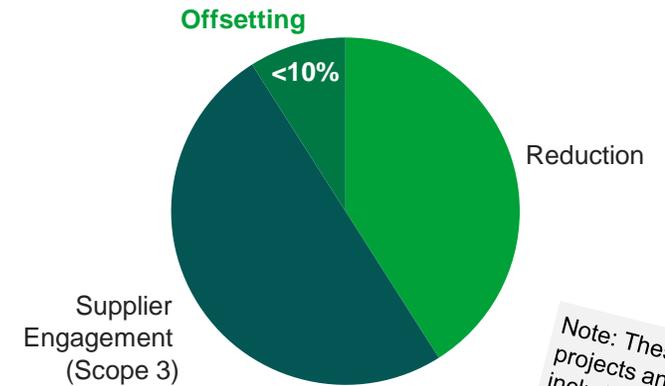
2040

Offsetting need is reduced significantly due to reduction and engagement measured performed by Lenzing and the TENCEL™ and VEOCEL™ fibers production sites.



2050

As Lenzing has become a net-zero company, offsetting will play a minor role to offer carbon neutral fibers on the market. Reduction and engagement measures add up to more than 90% of footprint reduction.



Note: These are external projects and do not include carbon sequestered in forests and plantations in Lenzing's value chain.



Internal Guidelines define a threshold for qualification of carbon zero fiber products, if a specific facility's products meet the below key criteria:
Product footprint, scope 1+2+3, before offsetting ≤ 2.5 t CO₂e/t fiber
Production impact scope 1+2 ≤ 1.5 t CO₂e/t fiber

With carbon neutral TENCEL™ fibers we contribute to reduction of global GHG emissions and support local communities



Geothermal energy in Yantai, China

Without this project many households in Yantai, Shandong Province, would still be reliant on using coal for heating. In total 48 thermal wells were built so far with a capacity of 381,55 MW. With the new system 6,332,500 square meters of new flats and 1,117,500 square meters of commercial buildings can be heated. This amount to ~382,540 t of CO₂ every year that can be saved.



Biogas in Punjab, India

In the Indian state Punjab households use gas from fermented biomass for cooking. In total, the project has installed about 12,000 biogas plants of various sizes with a direct outlet to households, which also significantly reduces indoor air pollution that is harmful to health.



**VIDEO
available!**

English video: <https://youtu.be/YMz5smcKdyl>

German video: <https://youtu.be/myqS-zbXpWk>



Solar energy in Surel, India

In the small Indian village of Surel in the Gujarat region a photovoltaic plant was built as part of this project. With a capacity of 25 megawatts, it feeds clean, sustainable energy into the Indian power grid. The project also contributes to sustainable development in the region by strengthening the energy supply and thus supporting the local economy.

Partnering for systemic change

For our carbon neutral TENCEL™ fibers, we need to offset a certain proportion of our carbon emissions. For this purpose, we cooperate with ClimatePartner, a company that offers climate action solutions: from carbon footprints and climate action strategies all the way to carbon neutral products with the support of international carbon offset projects.



6. Our low carbon products

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With carbon neutral VEOCEL™ fibers we contribute to reduction of global GHG emissions and support local communities



Afforestation in Guizhou, China

Through afforestation, this project reduces GHG emissions in Huangping, Wengan and Anlong counties in the Chinese province of Guizhou. The degraded soil and karstic rocky lands negatively impact animal and plant species, which also effects the socio-economic development of the region. Since 2016, 39,000 hectares of native tree species have been planted, creating 28,500 temporary jobs for farmers and 80 long term jobs for technicians.



Rainforest protection in Lábrea, Brazil

This carbon offset project protects 99,035 ha of Amazon rainforest, home to a great diversity of plants and animals. The project area is located in Lábrea in the Amazonas state, Brazil. Lábrea had the fourth highest deforestation rate in Brazil between 2008 and 2020 – with a consistent year-by-year increase in deforestation. With the help of surveillance activities, the project aims to avoid deforestation.



Solar energy in Surel, India

In the small Indian village of Surel in the Gujarat region a photovoltaic plant was built as part of this project. With a capacity of 25 megawatts, it feeds clean, sustainable energy into the Indian power grid. The project also contributes to sustainable development in the region by strengthening the energy supply and thus supporting the local economy.

Partnering for systemic change

For our carbon neutral VEOCEL™ fibers, we need to offset a certain proportion of our carbon emissions. For this purpose, we cooperate with ClimatePartner, a company that offers climate action solutions: from carbon footprints and climate action strategies all the way to carbon neutral products with the support of international carbon offset projects.



6. Our low carbon products

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Engagement & collaboration

Creating a firm foundation internally & externally

We are committed to stakeholder engagement and prioritize meaningful, collaborative and sustained engagement with a variety of groups such as suppliers, value chain partners and employees.

The aim is to be a sustainability leader and to have the necessary credibility to raise the standards of the entire textile and nonwovens industry. Having always aspired to be a pioneer in sustainability and an inspiration for the textile industry, we are looking to catalyze change for the better within the fashion and nonwoven industry towards a more circular and sustainable future.

Stakeholder engagement landscape¹



Key suppliers

- Sustainability is part of procurement process and strategy, e.g. EcoVadis assessment, sustainability clauses
- Top 20 key chemical and pulp suppliers are engaged directly
- Dialogues to develop innovative raw materials and incentivize suppliers for improvement



Multi-stakeholder initiatives

- UN Fashion Charter
- World Resource Institute (WRI)
- GHG Protocol: Update on carbon removals and land sector initiative
- CEPI (Confederation of European Paper Industries)
- Textile Exchange (TE): MMCF Round Table Group for Climate + strategy
- Sustainable Apparel Coalition (SAC)
- Apparel Impact Institut (AII)
- Roadmap to Zero by WRI & AII
- Renewable Carbon Initiative (RCI)
- Canopy Style Initiative



Policy-making

...contributing via different channels to development of EU legislation:

- Policy Hub for circularity
- EURATEX
- EDANA
- CIRFS
- IVC

7. Our wider influence: Supplier, multi-stakeholder initiatives and policy

Top industry ratings in 2022



CDP
DISCLOSURE INSIGHT ACTION

A LIST
2022

CLIMATE FORESTS WATER

Out of ~15.000 companies only 12 with AAA (=0.08%).

As a **triple A List** company, we are leaders in corporate transparency and action on climate change, water stewardship and deforestation.

Lenzing tops in Canopy ranking in 2022 (32 points)



30-35
25-29
20-24
15-19
10-14
5-9
0-4 Known Risk
Not Yet Assessed

PLATINUM **Top 1%**

2022
ecovadis
Sustainability Rating

MSCI
ESG RATINGS

AA

CCC	B	BB	BBB	A	AA	AAA
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RATING ACTION DATE: September 24, 2021
LAST REPORT UPDATE: December 20, 2022

CNGA/CNTAC

“Pursuer of Excellence in Sustainability 2021” award as “Pioneer of Carbon Reduction”.

ASRA

Sustainability champions award for Sustainability reporting (2021)

Continuous feedback process

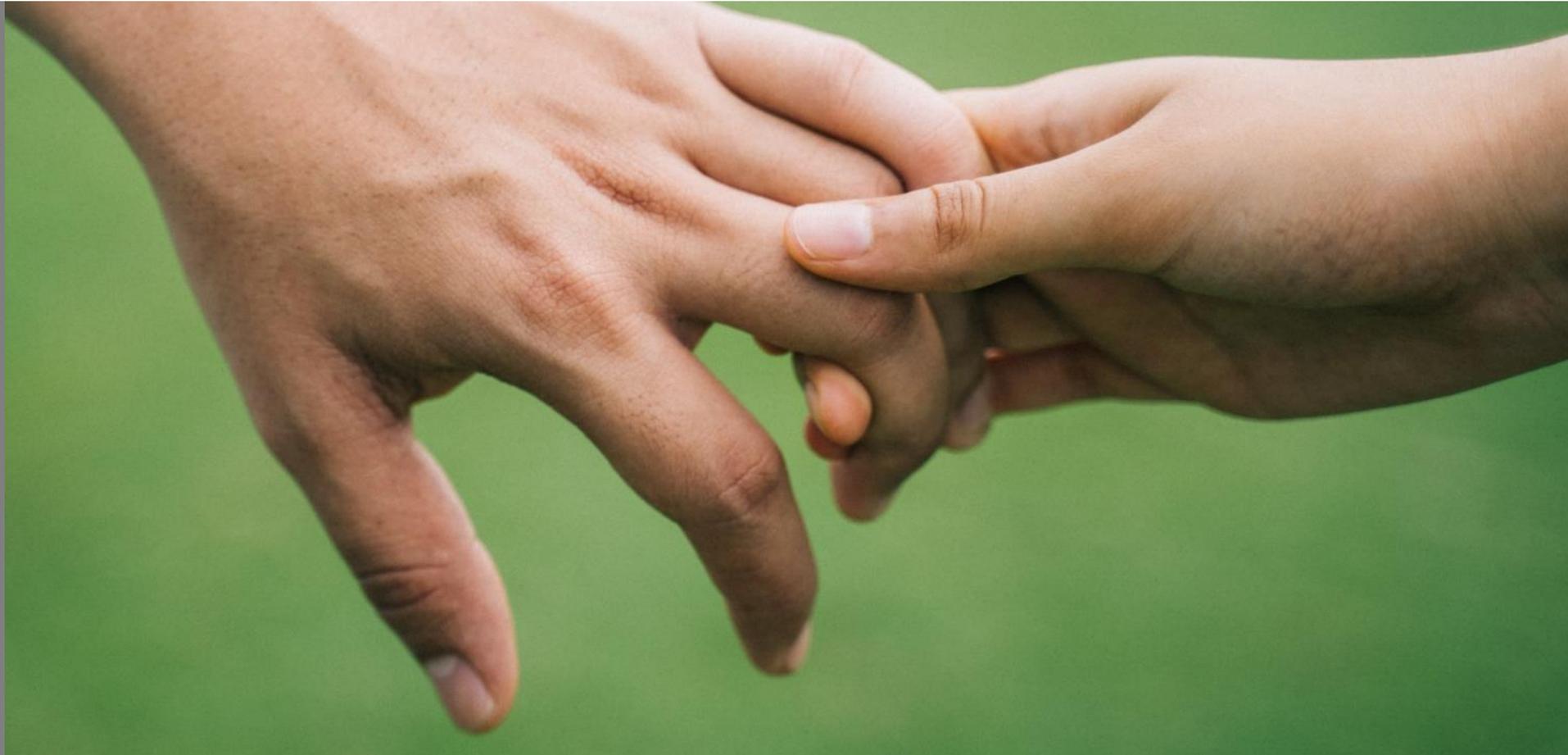
We are regularly engaging our key stakeholders such as customers, investors, suppliers, NGOs and policy makers. We would like to hear from you and learn your perspective to improve our action plan further.

Please feel free to contact us:

sustainability@lenzing.com

It is our responsibility to

ACT NOW



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- Definition and further details can be derived from the Sustainability Report, Half-Year Report, and Annual Report. These reports are also available online on the website of the Lenzing Group www.lenzing.com in the section "Investors".

**We invite you to be part of our journey and fast
track more solutions in the future**

Thank You