

SUSTAINABILITY REPORT

Natural Performance – *Our engagement for a bio-based future*



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Dear Readers,



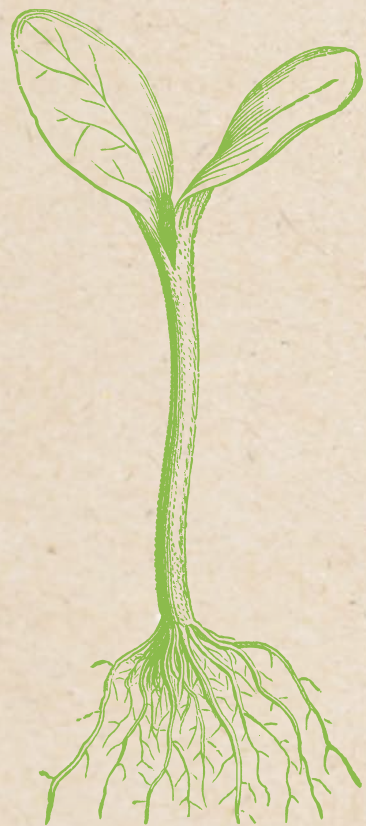
At Kelheim Fibres it is our clear vision to be the driving force behind individual solutions for a healthy lifestyle, while protecting the environment for future generations. In order to achieve this, we have built a culture based on our core values of Trust, Innovation and Engagement. These values direct our decisions and actions while we carry out our daily business.

We believe that sustainability can only be achieved through a long-term business approach. In Kelheim we have been producing viscose fibres for more than 85 years making us the longest operating viscose fibre plant in production today. This has been achieved by focusing on understanding and meeting our customer and stakeholder needs as they have evolved over the past decades.

Our operations reflect a commitment to continually invest in the best available technology to further advance product quality, reduced energy consumption, material recycling and reduce emissions. In addition, we make a very conscious effort to invest in our people by being one of the companies with the most apprentices in the region. Also, we support further education and training of our employees.

In order to drive new innovations and product solutions, we work closely with universities, research institutes, collaboration initiatives and customers. This has enabled us to develop a deep understanding of what is driving product performance, especially in hygiene and wellness applications. This is also enabling us to support the trend back to buying local products with higher value. We are also actively investigating new cellulosic fibre technologies that will further support the circular economy of the future.

Over the past 20 years, we have invested over 60 million euros in new technologies to improve energy efficiency and higher material recovery and recycling on the site. We are leaders in introducing new technologies for wastewater treatment and waste gas recycling in our industry. Our philosophy of innovation and continuous improvement in the area of environmental protection are also reflected in our recent certification under EMAS and our certifications under ISO 50001 and ISO 14001.



We view transparency as one of the key pillars of trust and have ensured that we have conformance throughout our supply chain with the strictest measures of sustainability. Our certification under EMAS makes Kelheim Fibres the most transparent viscose fibre producer in the world. In addition, we demand the highest level of transparency from our pulp suppliers by sourcing 100% from FSC® / PEFC™ certified sources as well as compliance with Canopy standards for protection of ancient and endangered forests. We source all of our key chemicals within Europe from suppliers who comply with the most stringent environmental and transparency controls in the world.

Sustainability and responsibility have always been a deep-rooted part of our philosophy at Kelheim Fibres. In order to centralise our sustainability strategy and communications, we created the role of a Sustainability Manager in 2020. Furthermore, and in order to establish an effective tool of communication for all of the topics outlined here, we committed to release an annual sustainability report by joining the UN Global Compact program in early 2021. This framework gives equal coverage to all areas of corporate responsibility and gives us the opportunity to not only report on the status quo but also our continuous improvement in all of the topics as well as the targets we have set.

The years 2020 and 2021 have turned out to be one of the globally most challenging in recent history. Not only has the COVID-19 pandemic raised deep concerns about our individual wellbeing, but has also challenged companies all over the world in many ways. Continuous risk-evaluation of supply chains to identify potential bottlenecks has been necessary to ensure production could continue without interruption. As have been efficient and simple hygiene concepts to protect employees. Our focus on short-distance supply chains for the resources we use, responsible business partners and a reliable health and safety concept ensured we were able to produce without interruption since the start of the pandemic.

Craig Barker,
CEO of Kelheim Fibres GmbH



Craig Barker
CEO



1

At a glance



Kelheim Fibres is the driving force behind the best individual solutions for a healthy lifestyle, while protecting the environment for future generations.

Craig Barker,
CEO of Kelheim Fibres GmbH

THE COMPANY

- Approx. 500 employees, often already in the second or third generation
- Firmly anchored in Kelheim since 1936
- Annual capacity of approx. 90,000 tonnes viscose fibres
- Inhouse R&D since 1936
- Increased focus on open innovation and future-forward technologies by increasing the focus on and resources available for New Business Development and Fibre & Application Development in 2020

OUR PRODUCTS

- Innovative viscose fibres through flexible technology
- Adjustment of fibre solutions to specific application requirements
- Incorporation of functional additives into the fibre matrix
- Modification of fibre cross sections
- Adjustment of fibre dimensions
- Customer-oriented and customer-specific innovation
- Share of speciality fibres: ca. 80%

FUTURE-FORWARD SOLUTIONS

Leader in Tampon Fibres

Our Galaxy® fibres are the leading solution in the global tampon industry delivering high absorbency, consistent performance and meeting the highest standards for purity and product safety.

Biodegradable AHP

Our femtec fibres are the perfect basis for absorbent hygiene products such as sanitary towels. They allow the production of skin-friendly and fully biodegradable AHPs that are comparable in performance with their synthetic alternatives.

Flushable Wet Wipes

Our short-cut fibres allow the production of soft and highly absorbent wet wipes. These can be easily disposed of via the toilet without clogging the sewage system and without polluting the environment with (micro)plastic.

Applications

- Femtec & hygiene wipes
- Apparel & wellbeing textiles
- Speciality papers
- Technical products



Short-cut

Our short-cut fibres give speciality papers the strength they need for packaging applications, in particular for sensitive goods. These fibres are free of synthetics, fully biodegradable and approved by FDA according to CFR 21 for food contact and by ISEGA for hot filtration.

Celliant Viscose

With infrared technology integrated into the fibre, Celliant Viscose improves local blood circulation and oxygen supply to the cells – for wellbeing textiles that provide the wearer with better performance, faster recovery and better sleep.



OUR SERVICES

AHP Competence Platform

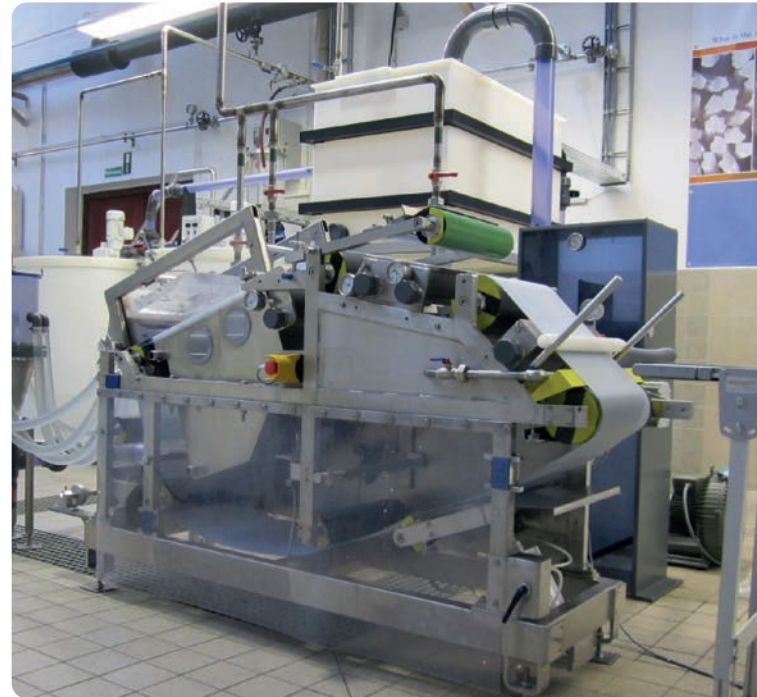
Our AHP competence centre provides an extra level of consulting, process expertise and service, particularly for more know-how-intensive solutions, and acts as an ideal interface between manufacturers and brands. We also help our customers to meet new challenges, and we make ourselves available to support their partners along the whole value chain.

Open Innovation

At the heart of our innovation approach is the identification of customers' "unmet needs" and translating them into fibre solutions. To achieve this, we focus on joint and open innovation and a close exchange with external partners. We are always striving for mutual inspiration as we know how important synergies are to channel an idea from the ideation stage to commercialization.

Wetlaid Pilot Plant

Our in-house pilot plant allows customers to take the first steps in developing innovative papers – and engineer their new products in close cooperation with our fibre experts.



Ilka Kaczmarek (Innovation Manager, KF) at AFBW general meeting at zwissTEX GmbH

LATEST AWARDS

- **2021:** Nominated for the German Sustainability Award in the category "Biodiversity" for the concept of our biodegradable fibres for absorbent hygiene products (AHP).
- **2021:** 2nd place in the Cellulose Fibre Innovation of the Year 2021 - Award
- **2021:** Ranked among the top 3 viscose staple fibre producers in the 2021 HotButton ranking of the not-for-profit organisation Canopy for the protection of ancient and endangered forests
- **2020:** Finalist at the Sustainability Heroes Awards with our fibres for absorbent hygiene products (AHP)



RECENT MILESTONES

- **2021:** Together with Renewcell we have formed a long term commercial collaboration to add the crucial missing link for a circular economy for textiles in Europe
- **2021:** In the context of SUPD legislation the European Commission confirms Viscose is not classified as plastic
- **2021:** We join the UN Global Compact in support of the adoption of sustainable and socially responsible policies
- **2021:** We join the ZDHC "Roadmap to Zero" Programme
- **2021:** We join the Environment + Climate Pact Bavaria in support of achieving sustainable development in Bavaria
- **2020:** Kelheim becomes the first viscose fibre manufacturer with an EMAS validated environmental management system

FUTURE CONCEPTS – ACCELERATING THE SHIFT TO CIRCULAR ECONOMY

To improve the sustainability credentials of the whole value chain, our developments focus on three aspects:

- Substitution of synthetic materials in single-use products
- Development of reusable products as an alternative to single-use products
- Increasing the share of alternative / recycled raw materials

2

Materiality analysis

As first step towards our sustainability strategy and reporting we conducted a materiality analysis. The target was the identification of material topics for communication as well as stakeholder involvement in our strategy.

We defined a general set of indicators for further evaluation. Those were compared to various state-of-the-art sources such as sustainability reports of other viscose fibre manufacturers, applicable law, the ten principles of the UN, external stakeholder enquiries or requirements for certification processes in order to ensure not missing out on important topics. 34 indicators have been finally selected and sent out to internal and external stakeholders in two separate questionnaires.

The external questionnaire was made publicly available on social media as well as on our website. That way we ensured that all stakeholders had the opportunity to participate.

In total, 36 internal and 66 external stakeholders answered the questionnaire. The result can be seen in Figure 1.

Full result of the materiality analysis

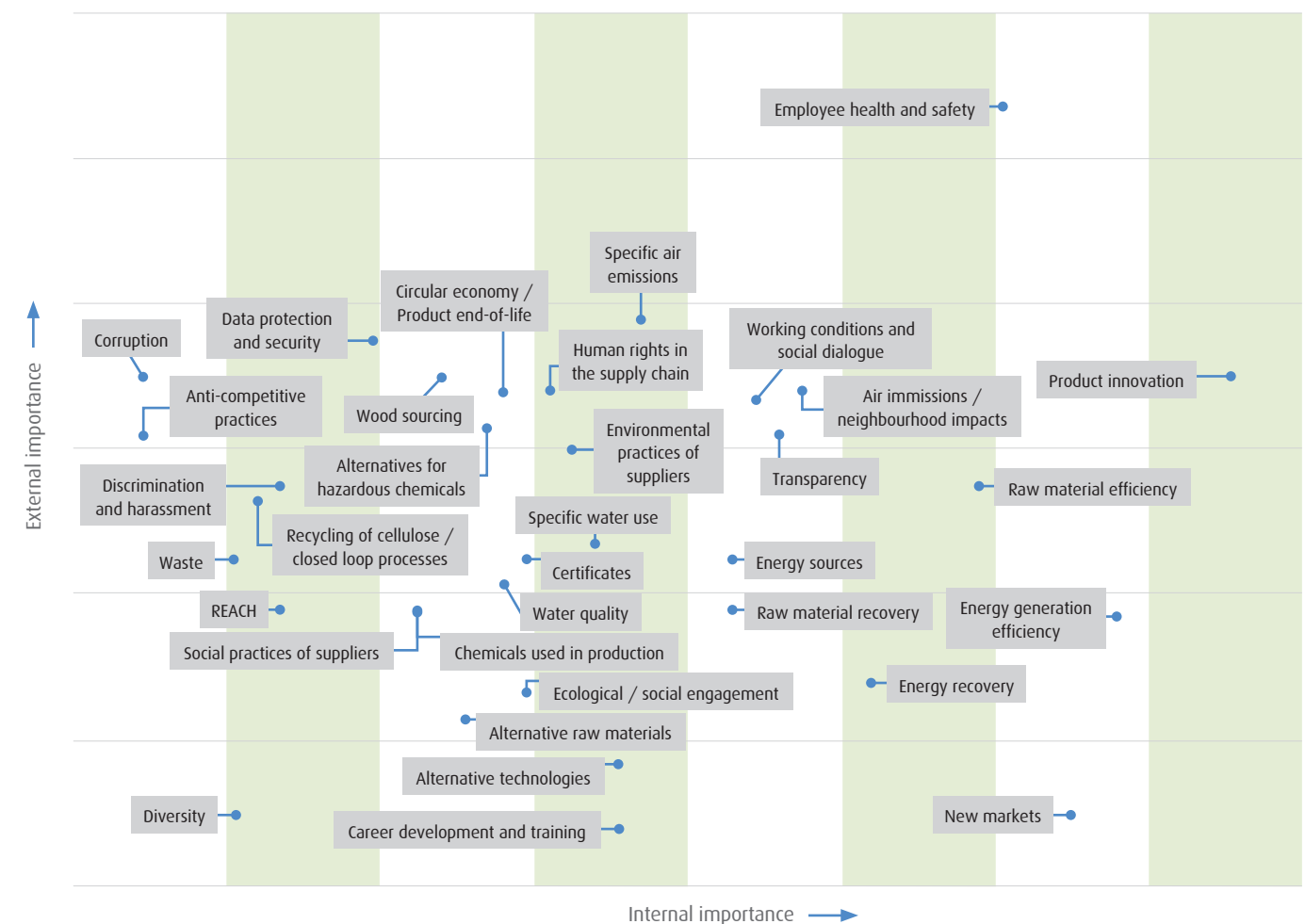


Figure 1

2.1 Topics of *high importance*

The survey asked for a rating of each topic from 1 (lowest score) to 5 (highest score). For the analysis, the average values for both perspectives were calculated with two decimal places of accuracy. The threshold for a topic of high importance was an equal internal and external score of higher than 4. This indicated that more than half of the interviewed participants ranked the topic with the highest importance available.

Seven topics were identified using those thresholds. The sum of the two dimensions results in the overall ranking and is indicated by the number in brackets:

TOPICS OF HIGH IMPORTANCE

- Employee health and safety (9.08)
- Product innovation (9.01)
- Raw material efficiency (8.53)
- Energy generation efficiency (8.53)
- Air immissions / neighbourhood impacts (8.43)
- Working conditions and social dialogue (8.36)
- Transparency (8.34)

Together with the 10 principles of the UN, those seven topics are **the backbone of our report**.

2.2 Topics of *medium importance*

As topics of medium importance we defined those with a sum value for both dimensions of 8 or higher. This threshold was selected because it shows the average importance of each selected topic of

higher than 4. Per definition, only one dimension can be rated higher than 4 (otherwise it would be a topic of high importance), so we can differ into internally and externally driven topics of medium importance.

INTERNAL TOPICS OF MEDIUM IMPORTANCE

- New markets (8.2)
- Energy recovery (8.12)
- Energy sources (8.11)
- Raw material recovery (8.04)

EXTERNAL TOPICS OF MEDIUM IMPORTANCE

- Specific air emissions (8.32)
- Human rights in the supply chain (8.1)
- Environmental practices of suppliers (8.05)
- Circular economy / Product end-of-life (8.04)

2.3 Other *topics*

The remaining topics were not defined as material. However, this does not mean that they are excluded from our strategy and reporting. We still try to include as many topics as possible overall.

Environment, social effects and compliance are the three pillars of sustainability. Together with responsible purchasing and innovation, they form

the cornerstones of our impact on our surroundings. The materiality analysis enabled us to set clear priorities for our future strategy in each of these areas. This report covers all of the activities and topics of interest we identified, matched to those five cornerstones.

2.4 UN *Global Compact*

The UN Global Compact is a worldwide reporting tool for companies of all sizes and branches. It requires the company to monitor and report on their performance in regards to the ten principles of the UN:



- Principle 1: Businesses should support and respect the protection of internationally proclaimed human rights; and
 - Principle 2: make sure that they are not complicit in human rights abuses.
 - Principle 3: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining;
 - Principle 4: the elimination of all forms of forced and compulsory labour;
 - Principle 5: the effective abolition of child labour; and
 - Principle 6: the elimination of discrimination in respect of employment and occupation.
 - Principle 7: Businesses should support a precautionary approach to environmental challenges;
 - Principle 8: undertake initiatives to promote greater environmental responsibility; and
 - Principle 9: encourage the development and diffusion of environmentally friendly technologies.
 - Principle 10: Businesses should work against corruption in all its forms, including extortion and bribery.
- By joining the UN Global Compact initiative, we have anchored those ten principles within our sustainability- and business strategy.

3

Environment



PRINCIPLE 07: Businesses should support a precautionary approach to environmental challenges

PRINCIPLE 08: Undertake initiatives to promote greater environmental responsibility

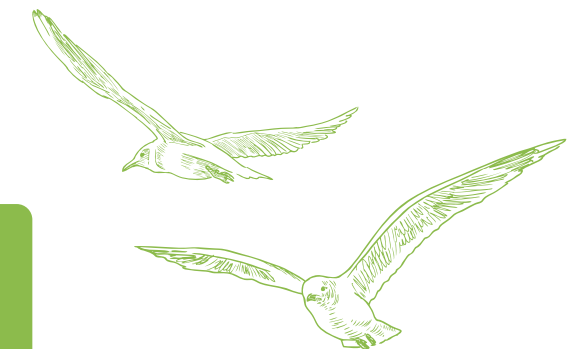
PRINCIPLE 09: Encourage the development and diffusion of environmentally friendly technologies.



Wolfgang Ott
Head of Health, Safety and Environment



*Sustainability does not just mean looking back on a long history, it also means **addressing the trends and needs of society.***



We look back on 85 years of company history. Even though our product range underwent significant changes over time, our unique selling points have always been our environmentally friendly, sustainable solutions and high-quality products. As the focus on environmental protection has developed significantly over the years, it is very important for us to always be ahead of trends and do the best we can to constantly reduce our impact on our surroundings. This does not only concern emissions, but also our contribution to climate change, our impact on our immediate neighbourhood, efficient use of resources and our contribution to the circular economy.

In 2020, we achieved EMAS certification as the first viscose fibre producer worldwide. This marked a significant milestone for our environmental management system.



3.1 EMAS

The EU Eco-Management and Audit Scheme (EMAS) is an environmental management instrument developed by the European Commission which enables companies and other organisations to evaluate, report, and improve their environmental performance. The base requirements are comparable to ISO 14001. However, EMAS is much more ambitious.

By introducing EMAS, we wanted to confirm and further improve our strong environmental performance. EMAS targets our shareholders, customers, our employees and last but not least, our region. All stakeholders benefit from EMAS and its transparency on different levels. Combining sustainable and ecological actions with an economic perspective is the goal we all share.

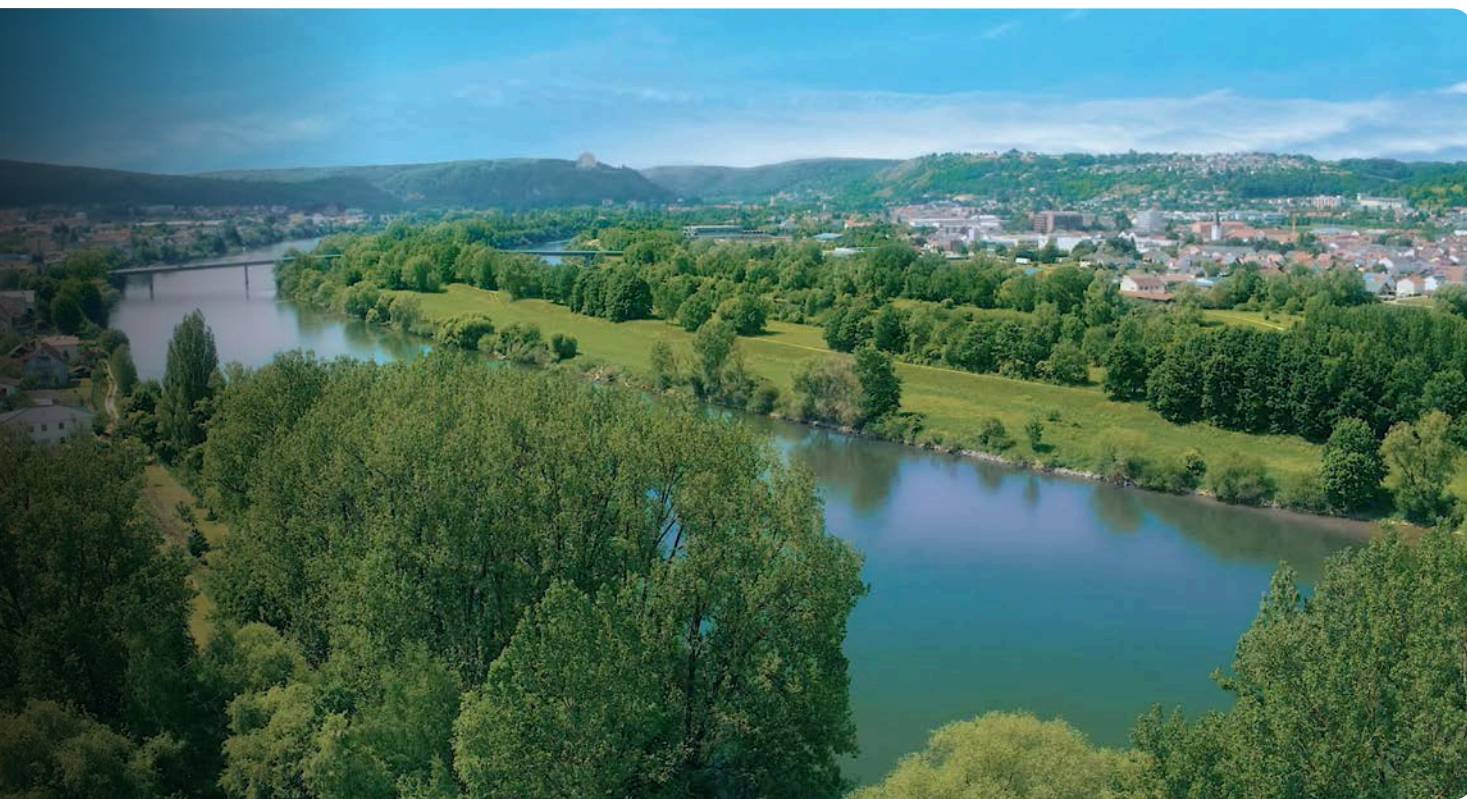


EMAS is part of our integrated management system, which covers the areas of quality (ISO 9001), energy (ISO 50001), hygiene (company standard) and compliance (on a holistic and cross-aspect basis). The management representatives of the individual management systems as well as legally required representatives (such as the water protection officer) report directly to the management. Instead of the commonly used top-down-approach with its lack of employee involvement, we sustainably anchored environmental awareness and consciousness within our company by delegating responsibility to our managers.

All employees went through special training with regards to EMAS and our environmental policy. Defined processes govern the interfaces between individual departments. Specific details are regulated in the applicable internal departmental work instructions. The regulations cover both normal operation and

emergency situations. We regularly set targets for the improvement of the respective environmental performance and pursue and review these as part of our continuous improvement process. We started to conduct annual environmental audits in 2020. In those, we check compliance with regulations, application of the management systems and improvements we aim to achieve. Once a year, the management conducts a evaluation within the context of the management review.





In line with our guiding values, we take our responsibility towards society, the environment and the region in which we produce seriously.

Compliance with all regulations and the documentation of processes provide confidence and security for all parties involved. We safely comply with specified limit values, meet both environmental standards and the highest requirements on the state of the art technology (like BREF) and use our know-how and experience to become even better. Good cooperation with the authorities is of central importance for us. While at the time of the company's founding, a location close to the employees' place of residence was a clear advantage, today, an industrial company is not perceived as a very popular neighbour

by adjacent residential areas. We nevertheless have a very good relationship with our neighbours and are actively committed to ensuring that it stays that way. Open communication is the basis for this. EMAS requires the regular environmental statement to be validated by an external environmental expert. This includes KPIs as well as the progressions of set targets. This adds another layer of transparency for interested stakeholders.



For more and more customers, the aspect of sustainability is a decisive purchase criterion – with the EMAS certificate and the associated publication of our data, we have a unique selling proposition that sets us positively apart from other viscose fibre manufacturers.

Theresa Schreiner,
Environmental engineer, Kelheim Fibres

3.2 Resource efficiency

A sustainable production process means conserving resources, minimizing emissions and waste, and operating plants in an energy-efficient manner. We achieve this by the operation of modern and technologically advanced recovery and processing plants. The recovery plants close the loop in our processes and guarantee a process-integrated approach. The following are examples of process-integrated plant operation:



- Carbon disulphide is recovered from waste gas streams in an activated carbon adsorption unit or by direct condensation.
- Waste streams containing high concentrations of hydrogen sulphide and carbon disulphide are fed to the sulphuric acid plant for incineration. This enables the production of sulphuric acid and high-pressure steam for subsequent power generation. This process also contributes to the reduction of reduce CO₂ emissions.
- On-site waste is disposed of in our incineration plant and used to generate steam. This reduces natural gas consumption and a reduction in CO₂ emissions from use of fossil fuels.
- Energy is recovered from hot media flows by the use of heat exchangers.

Resource efficiency: CS₂ consumption

Material	2018	2019	2020	
CS ₂	5.645	3.735	4.773	t
CS ₂	0.089	0.091	0.086	t/t fibre

Table 1



The BREF definitions, ZDHC specifications and common labelling schemes such as the Nordic Swan and the EU Ecolabel are used as benchmarks for sustainability.



BREF
Best Available Technology reference document of the European Commission



ZDHC Roadmap to zero
Non-profit organisation for eliminating harmful substances from the textile value chain.



3.2.1 Raw *materials*

The wood used for viscose production in Kelheim comes exclusively from certified, managed sources. Two types of wood are used: Plantation wood, in which the trees are reforested after harvesting, and wood from natural forests, which is no longer suitable for other uses, e.g. the furniture industry. Through the exclusive use of wood with FSC® and PEFC™ certification, we ensure that the wood was not obtained illegally or in violation of protection

regulations for humans and nature. By joining the Canopy initiative, Kelheim Fibres has committed itself to the protection of ancient and endangered forest areas. This commitment is also reflected in our policy on pulp purchasing. To achieve even greater sustainability in the use of raw materials, we are researching the use of recycled cellulose (“circular economy”) as well as other sources of cellulose (e.g. orange peel or straw).

Raw material intensities

Material	2018	2019	2020	
Pulp	1.033	1.038	1.033	t/t fibre
NaOH	0.532	0.519	0.516	t/t fibre
H ₂ SO ₄	0.780	0.753	0.753	t/t fibre

Table 2

3.2.2 Circular *economy*

Viscose fibres are a wood-based product with identical cellulose structure to the raw material wood pulp. An increasing number of end product manufacturers are committed to use only sustainable and plastic-free raw-materials. Furthermore, raw material availability, circular economy and transparent supply chains are becoming more and more important topics in relation to production processes and communications efforts.

All of these objectives have been followed at Kelheim Fibres for many years and are at the focus of additional measures. The sustainability of our

production processes is continuously improved by conserving resources, minimizing emissions and waste, and operating plants in an energy-efficient manner. To take a step further in the direction of developing resource- and waste-reducing solutions, we recently initiated a commercial collaboration with Renewcell, a sustaintech company based in Sweden. Together we will collaborate on developing commercial scale production of superior quality viscose fibres using Renewcell's 100% textile recycled material Circulose® and add the crucial missing link for a circular economy for textiles in Europe.



With Renewcell we have found a highly professional partner who shares our vision for future-forward technologies that enable full circularity in the textile chain. Our recycled cellulose fibre solution – made of Renewcell's Circulose® and manufactured using environmentally sound processes at our Kelheim plant – is an answer to the fashion industry's need for sustainable, resource- and waste-reducing solutions, and a more regional and reliable supply chain.

*Craig Barker,
CEO of Kelheim Fibres GmbH*





3.3 Energy

3.3.1 Energy *sources*

In order to meet our responsibility for successful, efficient and sustainable business operations, major focus is set on optimizing our energy needs. Our responsible use of energy resources is reflected by:

- The effective generation and provision of energy,
- The economic use of energy and the best possible use of residual energy from the processes,
- The efficient use of energy through recycling and reuse of process materials and
- Our continuous improvement process.

We operate a modern power plant at low emission levels using natural gas. This power plant is situated right next to our production facility. Due to this very short distance, we can also use the steam cogenerated in the electricity generation process, resulting in a massively increased efficiency of more than 88%. For comparison: a regular gas turbine achieves a global average efficiency of about 40%.

Average gas power generation efficiency in comparison¹

	Energy generation efficiency
Kelheim Fibres (power and heat cogeneration)	>88%
China 2016	48%
India 2016	40%
Germany 2016	48%
Australia 2016	36%

Table 3

Compared to the average emissions of German generation plants (366 gCO₂e/kWh²), our gas fired power plant only emits 15 gCO₂e/kWh. The operating of our power plant also gives us responsibilities in the context of the European climate targets (in accordance with the Kyoto protocol) as well as the German climate agreement (climate neutrality until 2050). Emission trading plays an important role to achieve this.

3.3.2 Energy generation *efficiency and recovery*

By operating recovery plants, we fulfil the requirement of material and thermal utilisation of waste gas streams. Waste produced at the site is thermally recycled within the plant. In our sulphuric acid plant we generate a significant proportion of our energy without releasing climate-damaging CO₂.

This enables us to save considerable amounts of primary energy of fossil origin, thus making an active contribution to reducing greenhouse gases.

We aim to generate energy from renewable sources and this is one of our targets for the next years. Other energy sources include the waste incineration plant with low-pressure steam generation and condensate streams being returned to the power plant.

¹ <https://guidehouse.com/-/media/www/site/downloads/energy/2018/intl-comparison-of-fossil-power-efficiency--co2-in.pdf>
² <https://www.umweltbundesamt.de/themen/klima-energie/energieversorgung/strom-waermeversorgung-in-zahlen#Strommix>

Energy consumption KPIs

Energy consumption	2018	2019	2020	Unit
Power	84,473,000	72,133,000	86,376.490.0	kWh
Power	1,325	1,766	1,555.7	kWh/t fibre
Steam	478,903,000	370,326,000	411,489,848.0	kWh
Steam	7,510	9,065	7,411.4	kWh/t fibre
Fuel for vehicles	249,882	202,478	178,654.6	kWh
Fuel for vehicles	3.92	4.96	3.2	kWh/t fibre

Table 4





3.4 Air

The use and handling of substances containing sulphur plays a important role in the production of viscose fibres.

Cellulose in the form of wood pulp is dissolved in caustic soda and carbon disulphide during the production process (xanthogenation) and forms a honey-like, highly viscous liquid, which gives the viscose process its name. This liquid is extruded into a coagulation bath through spinning jets, and the dissolved cellulose regenerates into a fibre. The process then passes through several steps, and carbon disulphide and hydrogen sulphide are removed from the fibres. The highly concentrated waste streams are fed to a

material recycling process, and the unarmful low concentration streams mainly enter the atmosphere via the 86-metre-high viscose stack. Beyond that, only a few partial streams are emitted close to the ground via the roof of the spinning area.

As many parts of our plant are subject to emissions control legislation, important emission parameters are recorded online and the authorities have unlimited access to the recorded data. This means that our plant emissions can be checked by the authorities at any time. Moreover, the plant also undergoes separate checks within the scope of annual inspections.

3.4.1 Specific *air emissions*

The high-concentration waste gas streams are treated either in the sulphuric acid plant, in which sulphuric acid is produced in a combustion process, or in the carbon disulphide recovery plant, in which the carbon disulphide is bound to activated carbon by means of adsorption.

Another form of carbon disulphide recovery is via direct condensation which we use on parts of our production line. The materials recovered in this way are then returned into the process. These use of these technologies has helped to reduce sulphur emissions from the plant by 45% in the last ten years. This enables Kelheim Fibres to comply with

the WHO's strict limits for environmentally relevant sulphur immissions, which are far more strict than the levels currently in place.

Specific air emissions

Emissions	2018	2019	2020	
Total dust	123.0	92.0	82.7	kg
Total dust	1.9	2.3	1.5	g/t fibre
SO ₂	102,168.0	93,153.0	129,590.0	kg
SO ₂	1.6	2.3	2.3	kg/t fibre
NOx	48,262.0	40,836.0	55,904.0	kg
NOx	0.8	1.0	1.0	kg/t fibre

Table 5

Development of specific sulphur emissions to air (kg sulphur / t fibre)

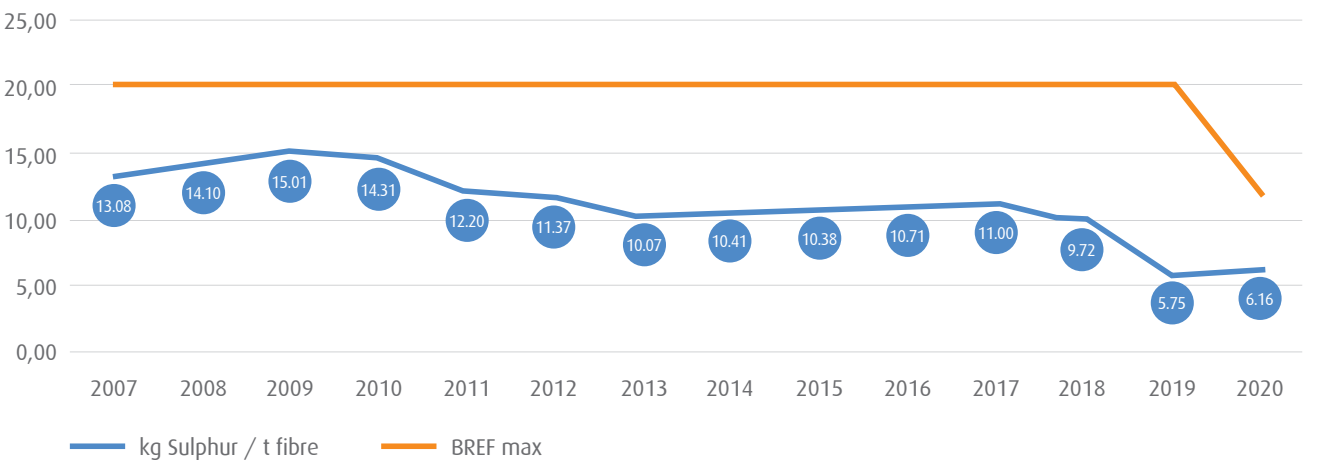


Figure 2

3.4.2 Greenhouse *gases*

For our EMAS certification, we used an external service to calculate our greenhouse gas inventory for calendar years 2019 and 2020. The calculation was conducted in accordance with GHG Protocol standards and therefore the analysis is structured in three scopes. Scope 1 includes all direct emissions from our processes. Scope 2 contains indirect emissions such as external power supplies. Scope 3 emissions

are the most wide ranging, including upstream and downstream supply chain data. For future years, we have decided to calculate the carbon footprint ourselves as this will enable us to examine the impacts of our processes and resources on a much more granular level of detail, enabling us to identify specific measures and quickly translate these into actions.

3.4.2.1 Output

Following a fire which damaged large parts of our production facility in 2018, we are still rebuilding our production capacity. Therefore, there is a steep increase in our yearly output. From 2019 to 2020, there was an increase in production output of 36.1%. This needs to be considered when analysing our emissions.

Annual production output volume

2019	2020	Change in %
40,808,075 kg	55,520,643 kg	+36.1%

Table 6

3.4.2.2 Scope 1

Combustion facility

Our production process is demanding in terms of energy supply compared to other industries. First of all, we need a constant and reliable energy supply. Secondly, we need high levels of power and heat. To meet these needs, we run our own on-site power plant – a cogeneration station which utilises natural gas for producing electricity as well as steam. Emissions from our waste incineration plant are also fed to this plant.

Combustion vehicles

As significant parts of our on-site logistics are via rail, we run our own shunting locomotive. The emissions from fuel used by this locomotive are included here.

Freezing agents

Our cooling plants need freezing agents to work properly. These need to be refilled regularly. As the refill-period does not necessarily coincide with calendar years, the values are not comparable year-on-year.

Carbon footprint: Scope 1 emissions

GHG-Category	2019	2020	Unit
Combustion facility	95,589.8	101,731.4	tCO ₂ e
Combustion vehicles	186.2	48.6	tCO ₂ e
Freezing agents	197.0	171.4	tCO ₂ e
Sum Scope 1	95,973.0	101,951.4	tCO₂e

Table 7

3.4.2.3 Scope 2

Carbon footprint: Scope 2 emissions

GHG-Category	2019	2020	Unit
Purchased electricity	41.5	130.0	tCO ₂ e
Purchased heat	--	--	tCO ₂ e
Purchased cold	--	--	tCO ₂ e
Purchased steam	--	--	tCO ₂ e
Sum Scope 2	41.5	130.0	tCO₂e

Table 8

Purchased electricity

In addition to our own electricity production, it is sometimes necessary to purchase external power from the grid. This is included in this category.

3.4.2.4 Scope 3

Carbon footprint: Scope 3 emissions

GHG-Category	Sub Category	2019	2020	Unit
Purchased goods and services		59,032.1	68,356.1	tCO ₂ e
	Water	15.1	11.1	tCO ₂ e
	Paper	15.0	8.3	tCO ₂ e
	Packaging	780.5	1,027.2	tCO ₂ e
Capital goods		--	--	tCO ₂ e
Fuel- and energy related activities (not included in scope 1 or scope 2)	Power	6.7	20.1	tCO ₂ e
	Fuel	7.7	7.4	tCO ₂ e
	Heat	1,907.6	1,626.4	tCO ₂ e
Upstream transportation and distribution		3,014.1	6,648.9	tCO ₂ e
Waste generation in operations		263.0	112.7	tCO ₂ e
Business travel	Flights	129.0	32.3	tCO ₂ e
	Train	2.5	0.6	tCO ₂ e
	Private & rental cars	--	57.4	tCO ₂ e
Employee commuting		1,122.7	1,177.9	tCO ₂ e
Upstream leased assets		--	--	tCO ₂ e
Downstream transportation and distribution		4,411.5	12,896.9	tCO ₂ e
Processing of sold products		7,069.1	9,501.9	tCO ₂ e
Use of sold products		--	--	tCO ₂ e
Sum Scope 3		77,776.6	101,485.9	tCO₂e

Table 9



Purchased goods and services

Purchased Goods and Services covers all emissions by resources necessary for our production, following a cradle-to-gate approach. As we are currently lacking in-depth insights into the CO₂-performance of all of our supply chain, some base assumptions are necessary. We aim to improve data quality and to establish closer cooperation in this area with our suppliers within the coming years.

Fuel- and energy related activities (not included in scope 1 or scope 2)

In contrast to Scope 1 and 2 emissions, we included indirect emissions caused by fuel consumption. This includes extraction, transport and processing of fuels.

Upstream transportation and distribution

This category covers all emissions caused by inbound transport from our suppliers to our site.

Waste generation in operations

Here, we differentiate between four different types of waste of which three are accounted for in this category:

- non-hazardous waste
- hazardous waste
- scrap
- waste to our incineration plant (this is assigned to Scope 1 as we generate energy with our waste)

3.4.2.5 CO₂-storage project “Humus-Tandem”

In 2020, we established a dialogue to evaluate further collaboration with a local farmers' initiative, the so-called Humus-Tandem. Goal of this project is to capture non-avoidable CO₂-emissions from our production by supporting the local generation of humus. With a

Business travel

Due to the COVID19-pandemic, our business travel activities for 2020 are only representing the timespan between January and March.

Employee commuting

Daily commuting by our employees is an important data point. During the pandemic, we established a home office system for employees whose presence is not needed on site (mostly administrative jobs).

Downstream transportation and distribution

This category covers all emissions caused by outbound transport from our site to the customers' facilities.

Processing of sold products

We are manufacturers of a wide range of specialty fibres which are used for multiple purposes in very different fields of application all around the world. As this is a topic of particular interest, we are currently working on generating a better database and deeper insights into the emissions from downstream processing.

generation rate of 0.2% p.a., around 10 t of CO₂ can be stored per hectare per year. Our project partners own 40 hectares, so with this project we can absorb up to 400 t of CO₂ every year. Additionally, the humus helps to fertilize and improve the quality of the soil.

3.5 Water

Our processes water is mainly used for cooling and is then returned into the river Danube, as the receiving body of water. Where water is required as a reaction medium in the process flow, we try as far as possible to use the water several times, thus saving resources.

3.5.2 Water *quantity*

After use, process water is purified in vertical bioreactors, which meet the highest standards of purification performance. Kelheim Fibres was the first company to invest in this state-of-the-art and unique vertical bioreactor technology. With a decomposition rate of 96%, our vertical bioreactors significantly

exceed the performance of conventional wastewater treatment plants, which is usually around 90%. Our purification capacity corresponds to that of a sewage treatment plant for a city with 160,000 inhabitants. A tight monitoring network, both internal and external, guarantees constant compliance with the legal limits.

Annual water use

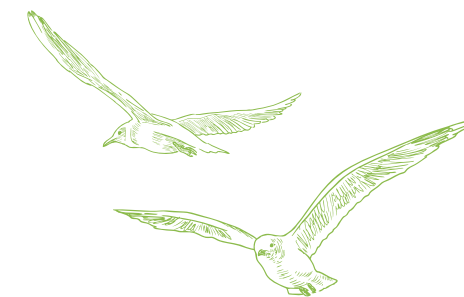
Water	2018	2019	2020	
Well water	13,232,890	13,252,014	14,014,095	m ³
Well water	208	324	252	m ³ /t fibre
Danube water	9,738,877	6,784,123	6,784,080	m ³
Danube water	153	166	122	m ³ /t fibre
Municipal water (only non-production)	23,538	22,062	16,181	m ³

Table 10

3.5.2 Water *quality*

Substances commonly referred to as pollutants deliver the basic nutrition for the microorganisms in our treatment plants. These microorganisms transform organic residues into harmless substances. The by-products of this process are mainly carbon dioxide, water and nitrogen. This natural process takes place under optimized conditions in the vertical bioreactors. Intelligent measurement technology helps to control the process in a very precise way: an Alphasizer, for example, is used to regulate the air supply to the

purification systems based on the expected loading of the plant. This ensures a constant supply for the microorganisms and that the introduction of air is energy-efficient. The wastewater produced in the process is returned to the Danube and compliance with the strict emission limits is monitored by the local water management authorities. We also fall under the Self-Monitoring Ordinance. Samples are taken and analysed on a regular basis to enable us to react immediately to any changes in the values.



3.6 Chemicals

3.6.1 Reach



Our responsibility as a manufacturer also means that our products do not pose a risk either during manufacture or during subsequent use. This is covered by the REACH regulations. Only approved raw materials may be used, and the conditions of use are specified in chemical safety reports. Threshold values are also set for substances that must not be exceeded in the finished products. The implementation of REACH follows a holistic approach and complements measures relating to operational and sustainable environmental protection.

3.6.2 ZDHC

Ø ZDHC The non-profit organization with more than 160 contributors worldwide has set itself the goal of completely eliminating harmful substances from the textile value chain. The ZDHC guidelines provide producers of Man-made Cellulosic Fibres (MMCF) with uniform criteria for measuring indicators such as wastewater, air emissions and other process-related parameters. The measured data is independently monitored and published. ZDHC provides us with access to a range of best practices in chemical management and gives us the opportunity to network and learn from each other with like-minded industry partners. ZDHC's collaborative approach will accelerate the shift to a more responsible industry and we want to contribute to that.

3.7 Waste

Waste produced at the site is disposed professionally. Internally, the site has its own residue incineration plant for this purpose. The plant, which was built in 1974 and modernised in 2001 and 2002 respectively, meets the highest standards of safety and emissions technology. The residue incineration plant falls under the 17th BImSchV. Natural gas is required for the combustion processes as well as the thermal energy of the waste, some of which has a high calorific value. The combustion processes generate approx. 4 tons of 16-bar steam per hour, which is then fed into the plant's low-pressure steam network for thermal use.



3.7.1 Non-hazardous waste

Non-hazardous waste, amount per categories

Waste management	2018	2019	2020	Unit
Total waste	5,644	5,613	5,984	t
Total waste	88.5	137.4	107.8	kg/t fibre
Process waste for recycling	212	195	117	t
Process waste for recycling	3.3	4.8	2.1	kg/t fibre
Process waste for disposal	2,184	2,114	2,062	t
Process waste for disposal	34.3	51.8	37.1	kg/t fibre
Other waste	3,248	3,304	3,805	t
Other waste	50.9	80.9	68.5	kg/t fibre

Table 11

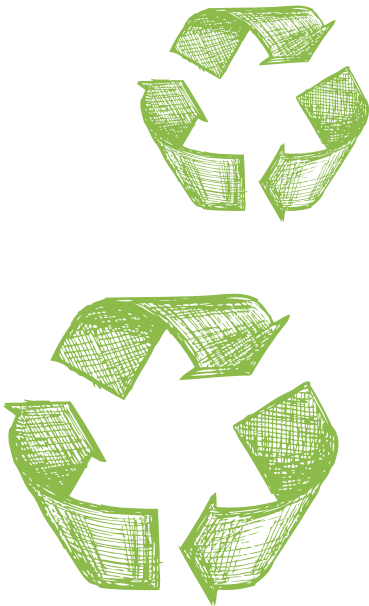
3.7.2 Hazardous waste

As we operate a state-of-the-art-plant with an experienced team, we are able to also treat CS₂-contaminated waste safely at our site. Any hazardous waste that cannot be reused in the process is disposed of in strict compliance with the prevailing regulations.

Hazardous waste, amount per categories

Waste management	2018	2019	2020	Unit
Total hazardous waste	867	1,099	1,201	t
Total hazardous waste	13.6	26.9	21.6	kg/t fibre
Hazardous process waste for recycling	102	73	35	t
Hazardous process waste for recycling	1.6	1.8	0.6	kg/t fibre
Hazardous process waste for disposal	153	141	113	t
Hazardous process waste for disposal	2.4	3.5	2.0	kg/t fibre
Other hazardous waste	612	885	1,053	t
Other hazardous waste	9.6	21.7	19.0	kg/t fibre

Table 12



3.8 Neighbourhood *impacts*

Hydrogen sulphide, the gas that is known from curative springs, is also released in the course of the production processes in our facilities and is sometimes noticeable to the population in the vicinity of the plant. Of course, the level of concentration and loads at which the hydrogen sulphide is released have a significant impact and Kelheim Fibres has always strived to significantly reduce sulphur emissions. In the last ten years, a targeted modernisation program has reduced the loads of hydrogen sulphide released by more than 50%.

The population density in Kelheim is growing and the residential areas are moving closer to industrial

locations. This trend is increasing in line with the current shortage of housing. Over the past ten years, we have invested several million euros in noise protection within an ambitious noise reduction program. Visible signs of this programme are our noise protection halls located to the west of the factory, the muffled stack of the carbon disulphide recovery plant and the renovated 86-metre-high viscose stack. Within the reconstruction measures following the fire in 2018, further measures reducing noise immissions from the roof of the spinning hall are to follow. This package of measures means that in future, noise immissions at the relevant immission points will be reduced by at least a further 6 dB(A).



3.9 Biodegradability

According to the provisions of the EU “Single-Use Plastic Directive” (SUPD), our viscose fibres are not chemically modified and therefore not considered plastic. One of the most important properties of the fibres in this context is biodegradability.

In respect of biodegradability, one of the first things that comes to mind is the compostability of garden waste. But what exactly does biodegradability mean and how is it proven?

Scientifically speaking, a product is only biodegradable when microorganisms are able to break down the material in question into its elemental components such as carbon, oxygen, hydrogen and minerals.

Compostability is however inextricably linked to biodegradability in the common understanding. Compostability is confirmed and demonstrated in



accordance with DIN EN 13432. However, in reality, compostability only covers part of the full definition of biodegradability. For example, how do substances behave in an aqueous environment? The pollution of the oceans by plastic is one of the central environmental issues still unsolved by mankind. Various test methods provide answers to the question of what environmental impact a substance has on the marine environment.

Biodegradability certificates: Overview

Method	Description
OECD 301 B	Evidence of ready biodegradability in 28 days
DIN EN ISO 14851 resp. ISO 14852	Oxygen demand in closed respirometer with sludge inoculum
DIN EN ISO 17756	Oxygen demand and/or CO ₂ evolution with soil inoculum
DIN EN ISO 18830	Oxygen demand in closed respirometer with sea sediment inoculum

Table 13

■ PART OF THE SOLUTION: VISCOSE FIBRES FROM KELHEIM

What is the big benefit of viscose fibres compared to oil-based fibres?

Compostability:

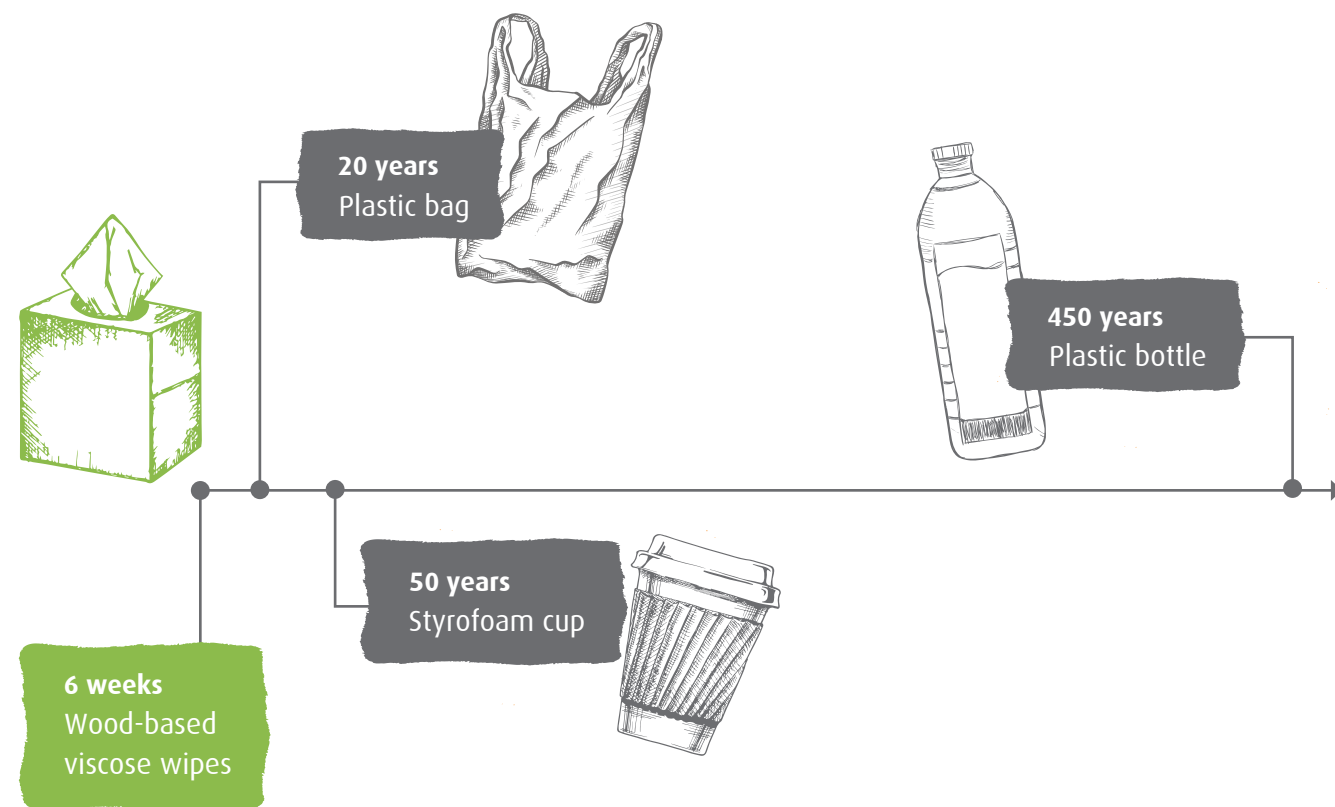
Viscose fibres are compostable according to DIN EN13432.



DEGRADATION BEHAVIOR IN THE SEA

The following picture gives a good overview of how viscose fibres compare to oil-based materials.

Average degradation time of products*

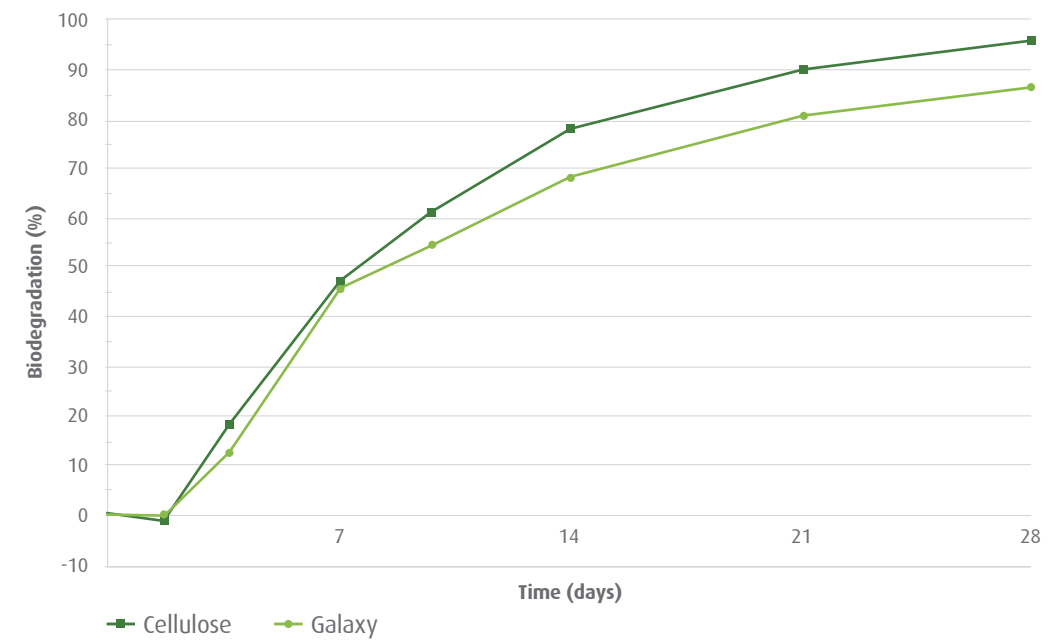


*source: statista_de/Nabu

Figure 3

How well the wood-based viscose fibres really degrade can be seen when tested alongside the naturally occurring polymer cellulose.

The biodegradation process of our Galaxy fibre compared to cellulose

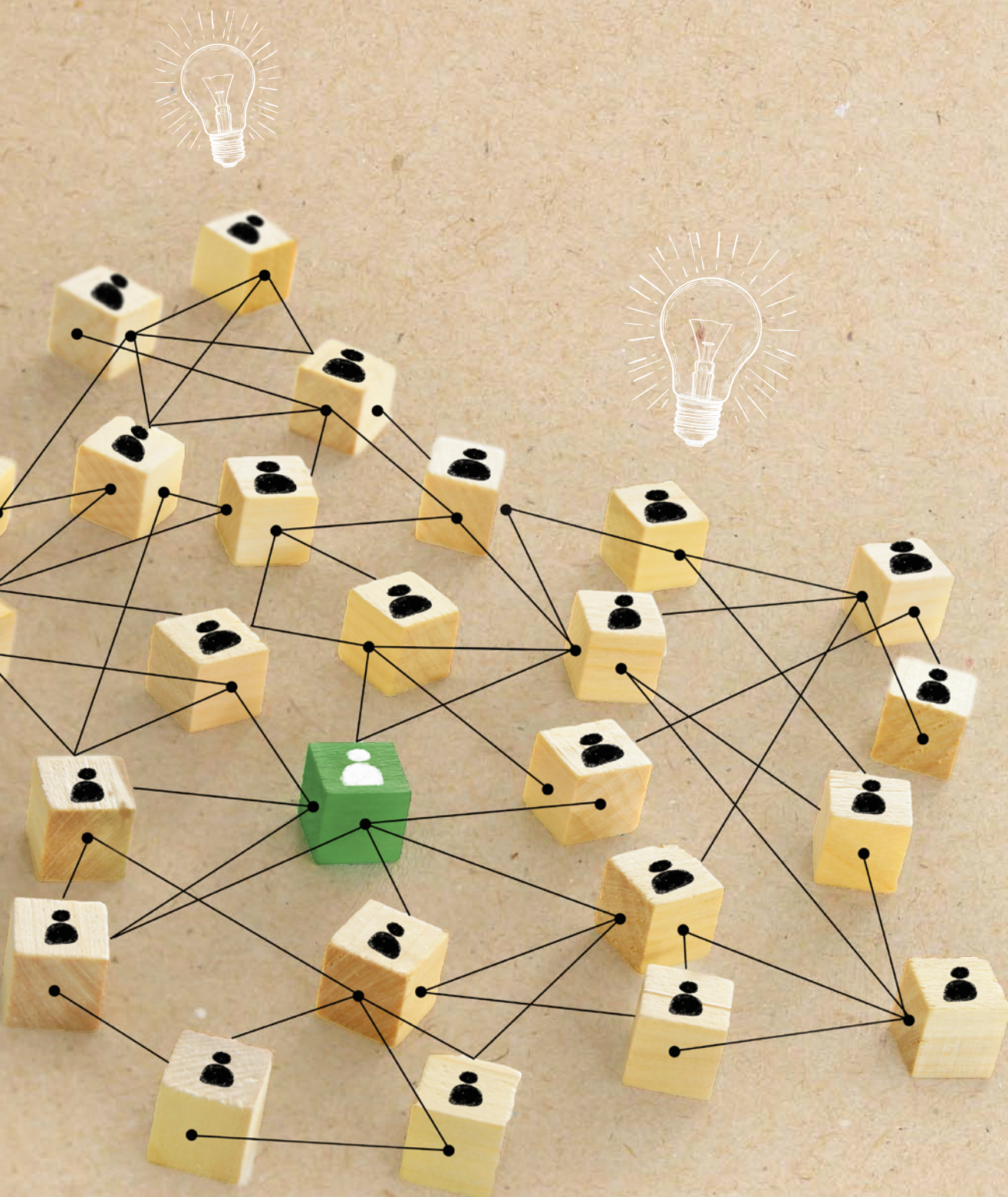


Viscose fibres thus fully meet the requirements of OECD 301 B, according to which a degradation performance of at least 60% must be achieved after 28 days.

Figure 4



4 Social



4.1 Working conditions *and social dialogue*



*Tobias Westner
Head of Human Resources*



Kelheim Fibres is an employer with more than 85 years of history in a rural area and this is the foundation for the social partnership with our employees. We exceed the minimum standards that are mandatory in Germany and this is a factor in the loyalty of our employees – in some cases we have employed several generations of the same family. We give our people the possibility to contribute their part to our success and to participate in the development of Kelheim Fibres as an important part of the community in Kelheim.”



4.1.1 Working *conditions*

It is the right of our employees to organise themselves through employee representatives and trade unions. The goal of our company is to find a fair balance between our economic interests and the interests of our employees, which has a lasting positive influence on the overall success of our company.

Kelheim Fibres works together closely with the labour union IG BCE (Industriegewerkschaft Bergbau, Chemie, Energie). This union covers all major topics like salary structures, vacation entitlements, working time models and many more via collective agreements.

Also, this agreement marks the baseline for our working conditions. Our minimum salary is 14.80 Euro per hour, this is 56% higher than 9.50 Euro, the German minimum wage in 2021. We also offer flexible working time models to our employees. We also offer flexible working time models as well as the possibility to apply for vacant positions internally via our intranet to our employees.

On top of that, we have more than 100 company agreements regulating all relevant topics of our workplace.

We strictly forbid forced, compulsory or child labour. All our regular employees are 18 years or older. In compliance with German law, apprentices can be as young as 15 years old. For those between age 15 and 18, a stand-alone law strictly regulates working conditions. For instance, they are not allowed to work on Saturdays or Sundays or in night shifts.

All our employees are given the opportunity to participate in a company pension scheme. At the end of 2020, 100% of our staff were registered for this program.

Our site has a subsidised canteen which provides food for all our shift workers. Over the year, the company contributes about 75,000 Euro to offer the best food for affordable prices.

PRINCIPLE 03: Businesses should uphold the freedom of association and the effective recognition of the right to collective bargaining.



4.1.2 Equality

Our work environment is defined by collegiality. We treat every human being with mutual dignity and respect, regardless of origin and circumstances. Age, disability, ethnic origin, skin colour, gender, pregnancy, sexual identity, nationality, religion or marital status play no role in personnel selection.

Our employment process is strictly formalised, the classification of a vacant position is exclusively based on the collective agreement and does not take into account any aspects other than the requirements of the position. When a new position needs to be created, there is a joint meeting between HR and our works council (the employee representation body) where the classification of this position is agreed. The outcome of this session is used as base for the job advertisement including the level of salary.

We take violations of our equality directive very seriously. Employees who violate any of the above principles will face disciplinary action.

PRINCIPLE 06: The elimination of discrimination in respect of employment and occupation.

4.1.3 Apprenticeship culture, *training and career management*

We are particularly proud of our deeply rooted local employee culture. As a company with highly specific skill demands, developing and retaining our workers is important for us. At the end of 2020 we employed a total of 500 people with an average employment period of 16 years. One pillar of our philosophy is not only to rely on the market to provide us experienced workers, but also to train our own specialists. At the end of 2020 we had 69 apprenticeship positions occupied. After completion of the apprenticeship, we aim to offer full-time positions to those trainees. In 2020, we employed 90% of our apprentices after they finished

their training. We also assess our employees based of their performance and provide them with fair feedback. Regular evaluations are carried out using a skill matrix. All new employees have to work through an initial training plan to guarantee base knowledge of all relevant topics for the company.

Furthermore, our employees have the opportunities to educate themselves via our training programme. In 2020, we spent more than 200,000 Euro on external training courses. In addition, we offer many internal training courses for company-specific topics.

4.1.4 Temporary *employment*

In some situations, it is necessary to rely on the support of temporary workers. We treat those workers in the same way we treat our own employees. In our sector of industry, the salaries and working conditions for temporary workers are also regulated in an IGBCE-union contract.

Whenever possible, we also try to offer temporary workers a full employment. In 2020 we could give 25% of our temporary workers the opportunity for a fixed contract.



25% temporary workers taken over into regular employment



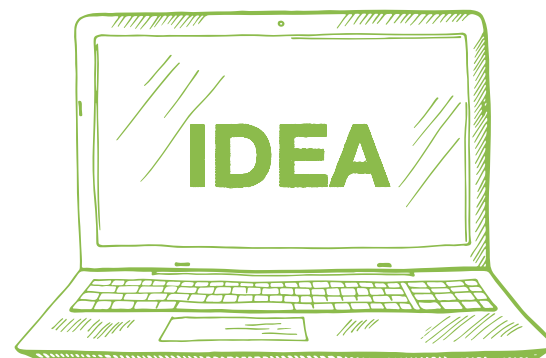
8/24 suggestions implemented

20,000 Euro annual saving due to employee suggestions

4.1.5 Employee *engagement*

Our management hosts quarterly employee information meetings in which everybody is updated about important KPIs and strategic decisions.

As we derive high benefits from the knowledge of our employees, we offer an improvement platform with a suggestion scheme. Employees with concrete ideas for improvement can upload their ideas to the platform and after evaluation and approval, the person who suggested the measure benefits from a share of any savings made.



4.1.6 COVID-19 *management*

With COVID-19 impacting global health and economy, 2020 and 2021 held many challenges. To eliminate risks and uncertainties for our employees, we quickly established reliable hygiene measures. Risk evaluations were undertaken for all our working places. In cases where proper safety distances could not be kept, we set up protective Perspex walls for office rooms. Also, we developed and implemented a concept for remote working to further eliminate the chance of any of our employees being exposed to the risk of infection. Our company doctor already offered testing capacities for holiday returners in September 2020 and in addition, we provided protective equipment to all our employees.

As a direct result, we have not had any outbreaks at our site and have lost no production output due to quarantine cases.



no production capacities lost due to COVID-19 cases amongst employees



4.2 Employee *health and safety*

Our employees are our most valuable resource. As we work with potentially harmful substances, proper protection is crucial. We see health and safety as one of the central aspects of sustainable production and aim to do more than meeting the minimum mandatory requirements. We regularly

assess the risks at all workplaces and we work on continuously improving workplace safety in co-operation with all of our employees All necessary personal protective equipment and clothing is made available to our employees.

4.2.1 Plant *Fire Service*

We operate our own fire service on site to rapidly provide protection to our employees in case of emergencies. This also helps to relieve pressure on the local town firefighters. Our fire service carries out regular fire-fighting drills and is responsible for the drafting and implementation of, as well as adherence to the site fire protection regulations and also maintains the fire extinguishers.

36 fire brigade exercises in 2020



4.2.2 Corporate *healthcare*

We offer an on site healthcare and medical service to our workers. The health status of our production workers is regularly monitored by our company doctor to ensure physical aptitude. The medical service is also responsible for the continuous measuring of biological limit values. Employees can consult our doctor concerning any questions of health. Our healthcare program also includes a vaccination service and our Machfit-platform as a virtual gym.



4.2.3 Regular *workplace inspections*



43 risk assessments



45 safety hazards reported by employees

1000-man-quota: 9.80

lost time severity rate: 0.64

All workplaces are inspected annually at a minimum with the objective of identifying safety risks. Our company safety officer, the safety officer of the department, a representative of the works council, the head of the department, a representative of the fire department as well as the company doctor and the operating manager ensure that all potential technical and organisational risks are identified and properly evaluated. Potential findings are recorded in a security protocol and addressed immediately. We see safety inspections as a continuous process and are always striving for improvement to make our work environment as safe as possible. To raise awareness, we also host regular trainings on workplace safety. Furthermore, we encourage our employees to report accident potential and near miss accidents.

4.2.4 Provision of *free protective work equipment*

Based on the risk evaluation, some of our workplaces have a potential of injury. To eliminate these risks, we first try to solve the issue with technical solutions. If this is not possible, we explore and implement organisational solutions as a next step. In case these are also impractical, we then offer or mandate the use of personal protective equipment.

We provide protective equipment and work wear to our employees as necessary. Included are, for example, protective goggles, security helmets and safety shoes as well as respiratory protection equipment or protective gloves. Also, in early 2020, we made washable COVID-19 protection masks available to all employees.

expenses for occupational safety equipment: 124,311 Euro



5

Compliance

PRINCIPLE 10: Businesses should work against corruption in all its forms, including extortion and bribery.

In order to maintain a free and competitive market, there are many laws and regulations in place. Kelheim Fibres is strictly adhering to full compliance with all such regulations. We not only adhere to legal requirements but use them as the base for our extensive Code of Conduct. This policy provides full guidelines for all employees on how to represent Kelheim Fibres' values internally as well as externally in an appropriate manner.

Every stakeholder can access our Code of Conduct on our website. In cases of uncertainty of how to behave in a specific situation, reference can be made to the relevant passage of the Code or direct contact can be made with our Compliance Representative for advice. Our target is to have zero violations of compliance topics.

We expanded our guidelines and compliance structure to cover the subjects of trade association work and trade shows in more detail in mid 2021. In addition, we have implemented a whistleblowing hotline in 2021.

5.1 Fair business *practices*

Our internal fair business practice rules focus on workplace behaviour, equality, and human rights. This is particularly important to create an inclusive working environment for employees with different backgrounds.

5.1.1 Human rights, *child- and forced labour*

The protection of human and children's rights is a fundamental and universal requirement for us as a company. We firmly reject all forms of child, forced and compulsory labour with a clear target of zero cases of human right violations, child- or forced labour. Admission to employment may under no circumstances fall below the statutory minimum age. National standards for the protection of children and young workers must be observed at all times. We expect the same standards from all our business partners.



Z E R O
violations of human rights

Z E R O
cases of child labour

Z E R O
cases of forced labour

PRINCIPLE 01: Businesses should support and respect the protection of internationally proclaimed human rights.

PRINCIPLE 02: Make sure that they are not complicit in human rights abuses.

PRINCIPLE 04: The elimination of all forms of forced and compulsory labour.

PRINCIPLE 05: The effective abolition of child labour.

5.1.2 Conflict *of interest*

We must do everything in our power to avoid conflicts of interest. Unavoidable conflicts must be resolved as quickly as possible. We handle conflicts of interest in an ethically sound manner. Conflicts of interest may arise in the relationship between Kelheim Fibres and customers, Kelheim Fibres and suppliers, Kelheim Fibres and its employees, or as a conflict of interest between different customers.

We expect our employees to inform their managers about relationships with persons or companies that could lead to potential conflicts of interest. Our target is to have zero reported conflicts of interest.



5.1.3 Bribery *and corruption*

We reject any form of bribery or corruption and expect behaviour that does not allow personal dependencies or influences. Our company shall never offer, solicit or grant any gift that is intended to unlawfully influence a person's decision or actions. We also do not expect or accept any undue advantages from suppliers or customers. If unauthorised benefits are offered, promised or granted to us, we shall inform the compliance officer.

Gifts, hospitality and invitations must never influence or create the appearance of influencing a business decision or lead to preferential treatment of the parties involved. The Anti-Corruption Directive regulates this in more detail.

The contacts that we at Kelheim Fibres maintain with officials and elected representatives are subject to the strictest laws and regulations, as well as our internal regulations for the avoidance of conflicts of interest and the prohibition of bribery and corruption. Our target is to have zero cases of bribery and corruption at any time.



5.1.4 Trading and *export controls*

For our company, the international market is a pillar of our success alongside to the domestic market. We benefit from the market economy and free, unhindered competition. Our actions are always in

accordance with the observance of all regulations for the import and export of goods as well as with all trade control laws.

5.1.5 Transparent *finance reporting*

Our business partners expect that the legal regulations governing the management and supervision of the company as well as the internationally recognised standards of good corporate governance are observed. They need a transparent financial report in order to have a picture of the company's assets, finances and earnings. With this in mind, all employees of the company must contribute to ensuring that our business transactions are fully

and correctly recorded in the books. Transparency and correctness are of paramount importance to us when it comes to proper accounting and financial reporting. Therefore, we strictly adhere to all legal framework conditions and ensure that corporate funds and anything that has or represents a financial value are traded responsibly and honestly at all times.



5.1.6 Product *safety*

The safety of our products is not negotiable. In order to comply with the applicable national and international regulations, we as a company guarantee the safety of our products by making it our goal not only to meet the legal requirements, but to exceed them. Here, we rely on an effective quality management system that ensures that our customers receive safe products of high quality.

5.2 Data *security*

5.2.1 Confidentiality

We place great importance on the completeness and accuracy of the information provided by us and treat business matters of which we gain knowledge in the course of our activities as strictly confidential. We do not misuse confidential information and do not pass it on to third parties without authorisation

5.2.2 Data *protection*

Using all suitable and appropriate technical and organisational means available, we protect corporate data as well as the personal data of our customers, suppliers, employees and other business partners against unauthorised access, unauthorised or improper use, loss or premature destruction. We support each other and exchange information within

Z E R O
data security breaches



the defined limits. We work closely together with Projekt 29, our external data security representative. Our data storage system has been renewed in 2021 to ensure the highest technical standard and security available. For our employees using company laptops, we ensure that no unauthorised access is possible in case of lost or stolen computers by the use of encrypted hard drives. Our server systems are structured in a hierarchical way, ensuring that employee access is limited only to the data they need.



5.3 Measures in *case of infringements*

If employees violate agreements and regulations of any kind during the course of their employment relationship, appropriate disciplinary measures are initiated. Priority is given to convincing the employees concerned to change their behaviour, by explaining the significance of our Code of Conduct.

Serious infringements may also result in disciplinary action. All employees are required to inform the compliance officer if they become aware of any violations. Deviation from the Code of Conduct may be permitted in specific situations but requires prior approval by senior management.

Z E R O
cases of compliance violations



6

Responsible *sourcing*

As a manufacturing company, we are dependent on a wide range of raw materials and other resources. In today's connected world, sourcing is a global topic. In theory, a company has almost infinite possibilities concerning resource quality, price, location of sourcing, medium of transportation and so on. This opens up different strategies for sourcing in general. An example of our responsible sourcing policy is that we source as many raw materials as possible locally, so reducing transport distances. Our main raw material, wood pulp, is sourced exclusively from manufacturers using only sustainably harvested wood.

6.1 Certifications

6.1.1 FSC® & *PEFC*™

Kelheim Fibres uses exclusively FSC® (Forest Stewardship Council) and PEFC™ (Programme for the Endorsement of Forest Certification) compliant wood pulp. The wood comes from sustainably managed forests, harvested under strict observance of social and environmental legal standards, and from other controlled sources.



6.1.2 Oekotex *Standard 100*

Oekotex product class 1 annex 6

If a textile article carries the OEKOTEX STANDARD 100 label, the consumer can be certain that every component of this article, i.e. every thread, button and other accessories, has been tested for harmful substances and that the article therefore is harmless for human health. Our products have been certified accordingly.



6.1.3 Canopy

Canopy is a not-for-profit environmental organization dedicated to protecting forests, species and climate. Canopy has collaborated with more than 750 companies to develop innovative solutions, make their supply chains more sustainable and help protect our world's remaining ancient and endangered forests. Kelheim Fibres achieved a dark green / green shirt as the third-best evaluated viscose manufacturer in the 2021 Canopy Hot Button Ranking.



6.2 German Supply *Chain Law*

From 2023, the German Supply Chain Law will require companies to take responsibility for human rights related risks within their supply chain. This will mean that a company can be held directly accountable for violations of human rights anywhere in their supply chain.

At the start, this applies to companies with 3,000 employees or more. Later, companies with 1,000 or more employees will also fall under the legislation.

With about 500 employees, we will remain outside the scope of this law in the next years. However, taking responsibility for the conditions in our supply chain is part of our duty to ensure that the resources we use are manufactured under fair conditions. Our clear target is to comply with all regulations under the new German Supply Chain Law and we will include human rights in our regular supplier assessment questionnaire.

6.2.1 Compliance *in the supply chain*

The FSC® certification process includes a timber legality compliance screening and PEFC™ operates a whistleblowing system in regards of compliance infringements. In both cases, our suppliers need to be certified in order for us to be eligible for the certification. Therefore, a regular compliance screening as well as permanent control mechanisms are in place for all our wood pulp suppliers to ensure highest levels of compliance with sustainable sourcing.

**100% pulp suppliers
certified in accordance
with FSC® / PEFC™**



6.2.2 Environmental *practices of suppliers*

We conduct regular supplier screenings. In course of these, we award points for an environmental management system in place (particularly according to ISO 14001 or EMAS) as well as energy management in accordance to ISO 50001.



No one can walk a path without taking the first step. Responsible sourcing is the first step to sustainable action. Certifications show that you are facing up to the tasks and requirements.

*Michael Svoboda,
Head of Quality Management, Kelheim Fibres*





7

Driving force behind innovation

INNOVATION STARTS WITH A VISION

Innovation is firmly anchored in our corporate philosophy, we dedicate a substantial part of our work to making innovations happen that support an eco-friendly and healthy way of living. By creating solutions that unite nature and performance we actively contribute to the shift from a fossil-based to a bio-based economy, conserving our green planet.

Kelheim Fibres puts innovation activities at the core of its path to the future. We act as the facilitator and development accelerator of future-oriented, sustainable solutions across the bio-based cellulosic pulp and fibre industry for existing and emerging markets.

7.1 Open innovation – *collaborative development*



Dr. Marina Cmoja-Cosic
Director New Business Development



We continuously identify the megatrends that are moving our society and find out the role our fibres can play in solving the challenges of our times. That is only possible through dialogue."



Networking-Highlights

- "Tailor-made Cellulosic Regenerated Fibres – Co-Creation and Co Innovation", Innovation workshop at Gesamtmasche technical committee
- "From a Fossil-based to a Bio-based Future", Innovation Workshop as part of the Hack Your Fashion online hackathon during the Fashion Revolution Week
- "PlanB – Biobased.Business. Bavaria.", Kelheim as prize sponsor at international start-up competition organized by BioCampus Straubing which honored the best new business ideas in the field of bio-based solutions

A central pillar of our endeavour is "Open Innovation": sustained commitment from industry, researchers, and policy makers is a prerequisite for the rapid development and commercial viability of bio-based solutions. Our Open Innovation concept brings together like-minded market participants and helps to identify unmet consumer needs and to develop corresponding solutions.

Innovation exchanges and mutual inspiration as well as cooperative approaches (especially also across industries and outside the fibre business) are the tools on which we rely.

■ HOW WE FILL OUR VISION WITH LIFE

We use forward-looking techniques such as trend monitoring approaches – the observation of trends on different levels of abstraction (mega trends, industry trends, consumer trends) – and creative methods to define possible technological requirements that may result from these trend developments. In this way, solutions for tomorrow's needs can already be designed today.

As a specialty viscose fibres producer, Kelheim Fibres is positioned at the beginning of the value chain, far removed from the end product and while our innovative functional fibres can lay the groundwork for new and unique textile or nonwovens products, the producer of these end product is not always aware

association memberships
(cross-industry): 31



of this potential. Through the close interaction of all participants in the value chain, we can significantly accelerate the time span from fibre development to the commercialisation of the end product.

By opening up our innovation process to the outside world, we create market-oriented solutions based on actual consumer needs.

7.2 Applications for the future –
improving tomorrow

Newly established contact points



New approach: for instance new innovation exchange, brainstorming to generate new impulses for existing clients or new approaches with new customers (e.g. new business models). Bubble size shows number of contacts (new customers) with which we were in extensive exchange.

Figure 5

■ PERIOD UNDER REVIEW: JULY 2020 – JUNE 2021

Our innovations have to fulfil two major criteria: they have to offer an added benefit for the consumer as well as an added benefit for our environment. In other words: Our innovative products aim to substitute synthetic materials in a broad range of applications – while improving the performance of the end product for the user.

established contacts
with start-ups: 35



7.2.1 Environmentally positive.
Added benefit for the environment and for future generations

Our viscose speciality fibres are made of 100% wood pulp and are fully biodegradable. But in contrast to natural fibres, our production process allows us to make precise adjustments and so to adapt our fibres to meet our customers' specific needs. We can define our fibres' cross-section and dimensions and functionalise them

by incorporating additives permanently into the fibre matrix. This allows our viscose fibres to become a viable alternative to synthetic fibres, offering the same or even a better level of overall performance in the end product and increasing the sustainability credentials of the whole value chain.



Closed loops for sustainable fibre production

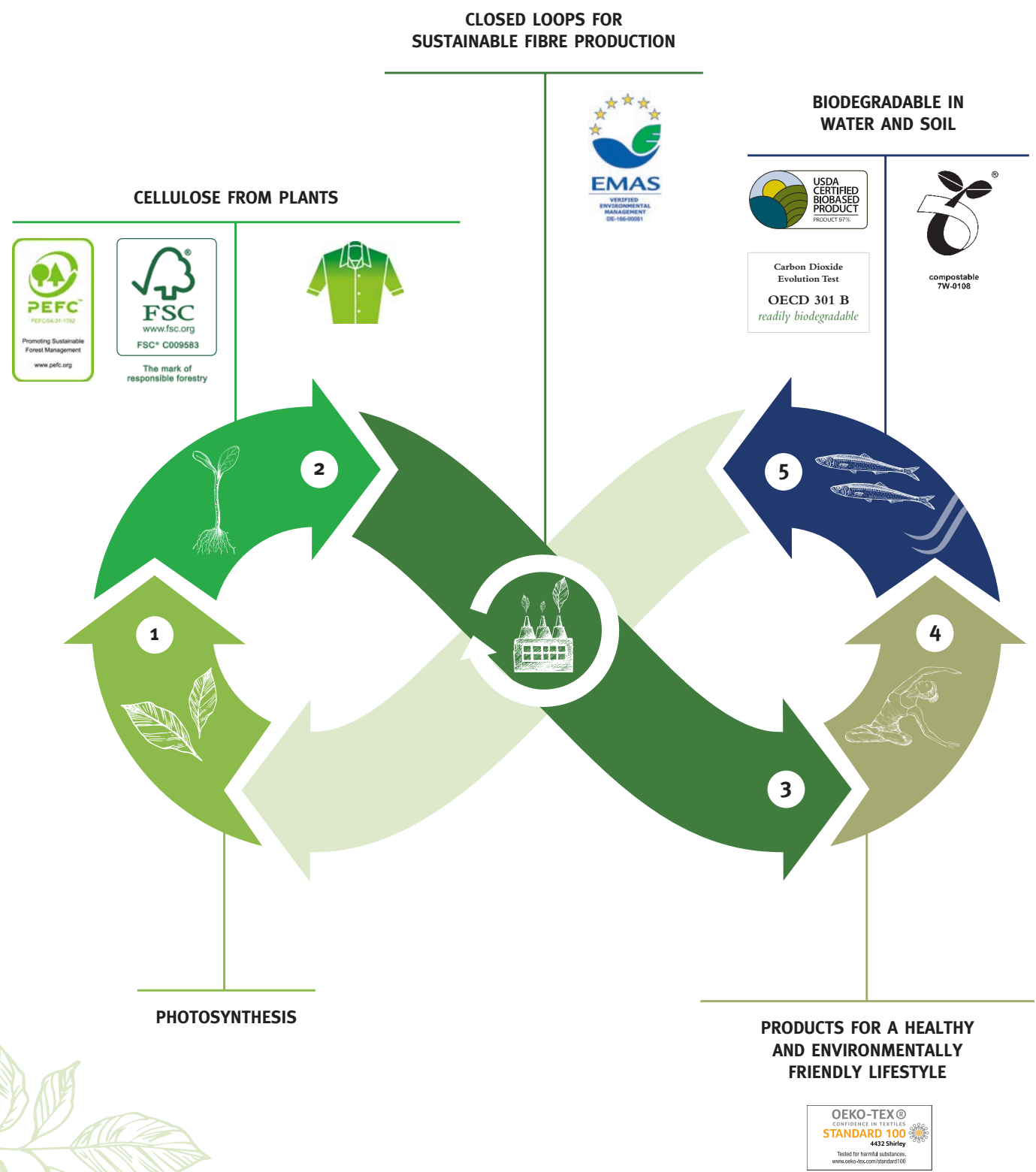


Figure 6



7.2.2 How our fibres contribute to a healthy and sustainable lifestyle

“Fibres can be found almost everywhere and they are present in every phase of human life. Fibres are all around us – some visible, some not. But all the different fibres we produce here at Kelheim have one similarity – they offer comfort and protection. Our functionalized fibres are at the core of numerous hygiene products, such as femcare or incontinence products.

These products offer the consumer absolute reliability and an extraordinary level of comfort. In textile applications our fibres transform everyday textiles into something special, boosting the wearer's wellbeing. The fact that our fibres are biobased and biodegradable is an integral part of every end product and supports a sustainable lifestyle.”

Dominik Mayer
Project Manager Fibre & Application Development,
Kelheim Fibres

- Awards**
- 2021: Nominated for the **German Sustainability Award** in the category “Biodiversity” for the concept of our biodegradable fibres for absorbent hygiene products (AHP).
 - 2021: 2nd place in the **Cellulose Fibre Innovation** of the Year 2021
 - 2020: Finalist at the **Sustainability Heroes Awards** with our fibres for absorbent hygiene products (AHP)



7.2.2.1 Holistic *Wellness Approach*

Our wellbeing depends on a multitude of tangible and intangible factors that affect and influence our lives every single day. A holistic approach to overall wellbeing helps us to successfully overcome life's challenges and stress.

Our fibres can also make a contribution here. With their special functionalities they support the physical, mental and emotional wellbeing of the end user by adding a little something extra to our

customers' fabric or structure: skin-friendliness, moisture absorption, rapid drying, breathability, lightness, UV repelling characteristics or infrared technology are just a few examples.

As they are made from renewable materials and are biodegradable, our fibres take into account the consumer's desire for eco-friendly products. They help calm their conscience and so contribute to their wellbeing.

Celliant Viscose is the first in-fibre sustainable viscose infrared (IR) solution. Natural minerals embedded into our plant-based fibres create infrared products that promote local circulation and cell oxygenation while inhibiting odor and helping keep the body at the right temperature.

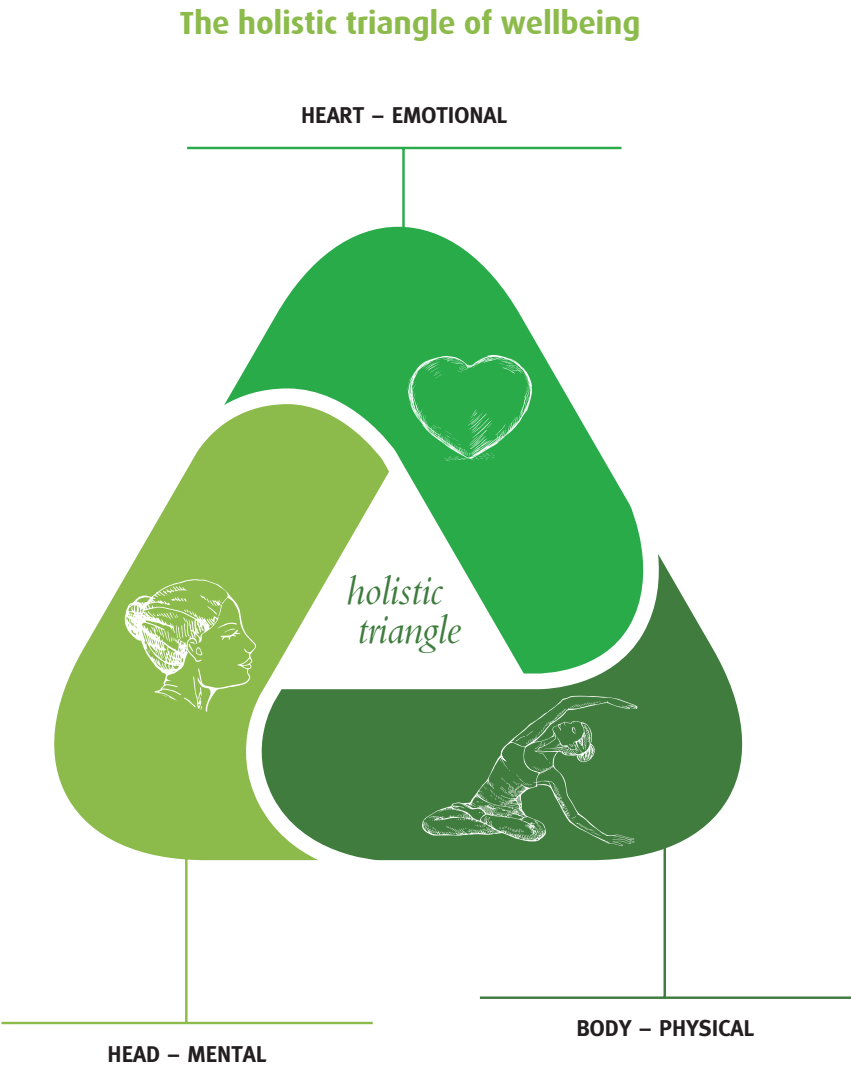
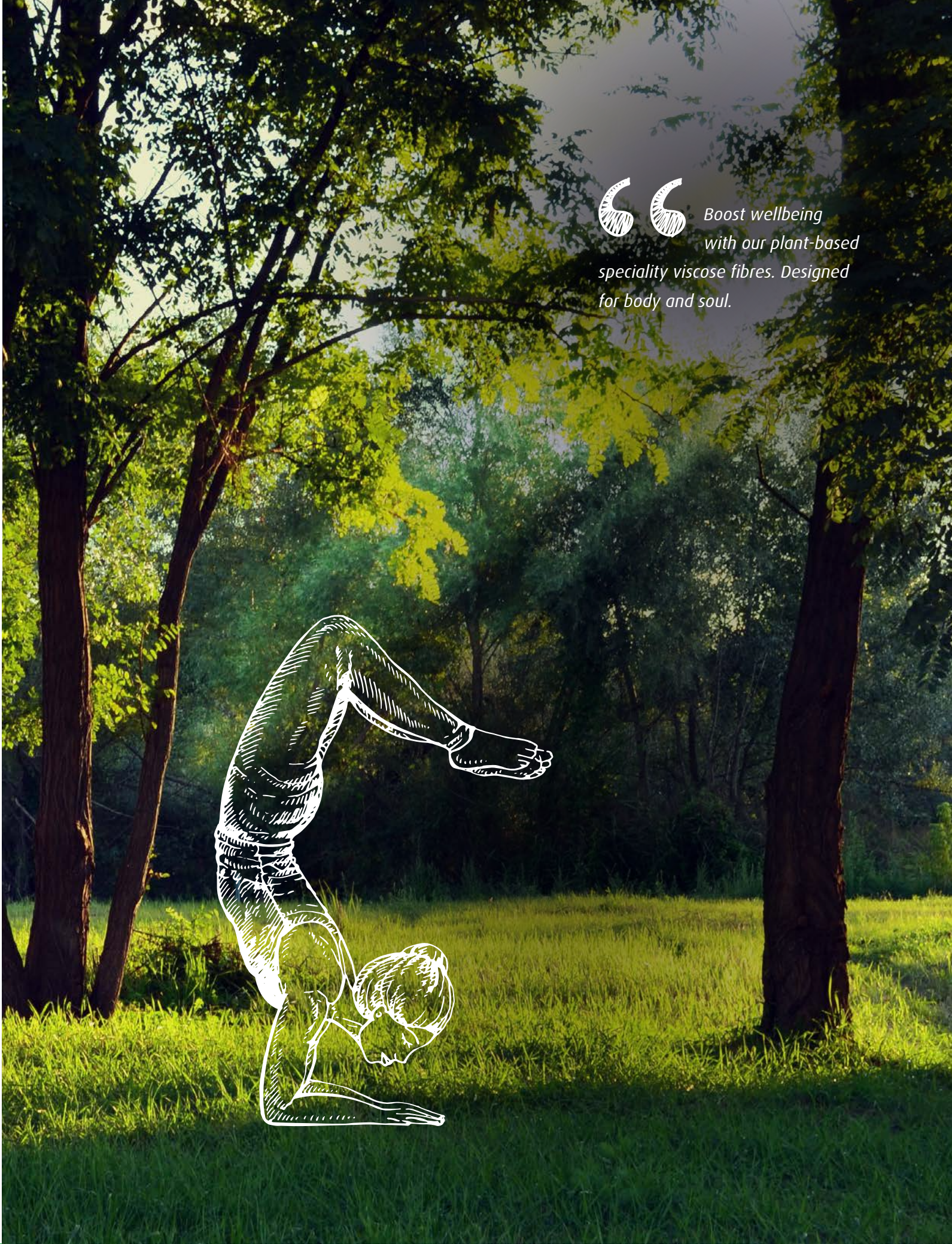


Figure 7

“ Boost wellbeing with our plant-based speciality viscose fibres. Designed for body and soul.



7.2.2.2 How we tackle the *challenges in the field of AHP*

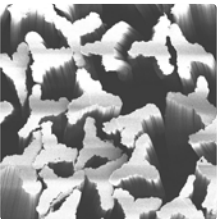
■ **BIODEGRADABILITY FOR CLEAN OCEANS AND LANDFILLS**

Every woman uses about 15,000 period products in her lifetime – most of which are single use products – so AHP (**A**bsorbent **H**ygienic **P**roducts) are responsible for an enormous amount of plastic ending in landfills or even in our oceans month by month. To substitute these plastics with biodegradable alternatives would bring an unmeasurable benefit for our environment. But at the same time, particularly in the field of AHP, users are not

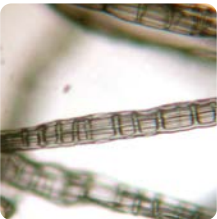
prepared to compromise on performance. On the contrary: AHP must be absolutely reliable. Our speciality fibres for AHP can manage this balancing act: in contrast to natural fibres, where the fibre form is already defined and which can only be treated on the surface, our technological flexibility offers the possibility to tailor our fibres specifically to the requirements of the individual nonwoven layers of the AHP.



TOPSHEET:
Semi-hydrophobic
Our hydrophobized fibre Olea for quick acquisition time and lowest rewet is super-soft and leaves a pleasant feeling on the skin.



ACQUISITION-DISTRIBUTION LAYER (ADL):
Fast fluid acquisition & efficient liquid distribution
Our trilobal Galaxy improves wicking via capillary channels – for a fast fluid acquisition and an efficient liquid distribution.

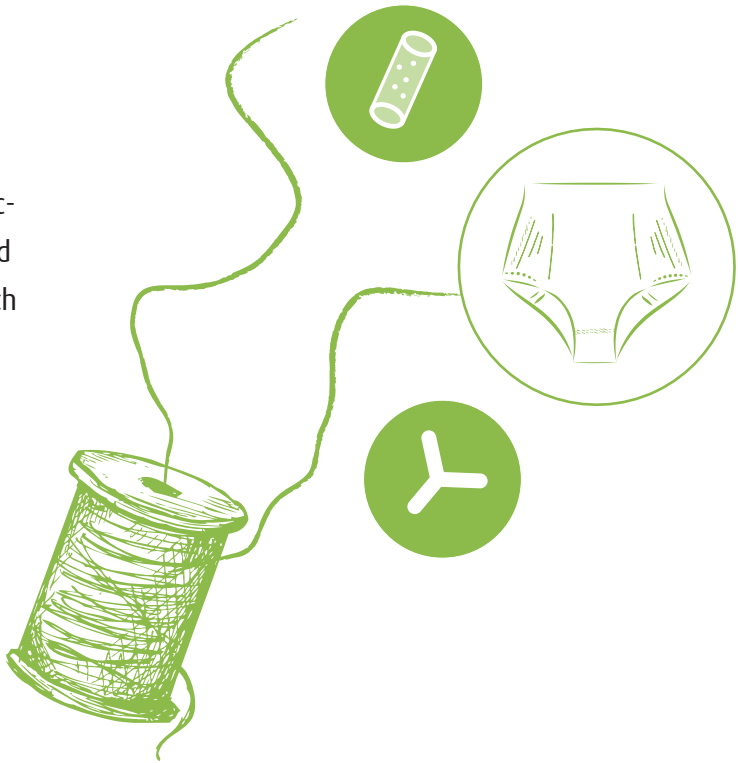


ABSORBENT CORE:
High liquid capacity
Our hollow fibre Bramante absorbs up to 260% of its weight in liquids inside the fibre. For a bio-based fibre, that is an outstanding performance. It also excels in its retention capacities.



■ **REUSABLE PRODUCTS FOR CONSERVING RESOURCES**

Our fibres can also be processed in the textile sector, enabling solutions in the field of reusable and therefore resource-efficient hygiene products such as menstrual underwear.



7.3 Future technologies – *beyond the state of the art*

With environmental awareness rising among consumers, the whole industry is undergoing a change, sometimes it seems at a revolutionary pace. We see and welcome the growing commitment among our industry partners to sustainable solutions.

We in our turn are committed to examine thoroughly what possibilities these changes can offer us: We actively investigate how alternative raw materials can be used in our production processes and how our processes can be modified in order to use them.

Our goal is to increase the sustainability credentials of our fibres while creating new fibre properties without compromising on their performance.

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