



# Sustainability at Pankaboard 2023



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## About this report

This report is Pankaboard’s third sustainability report, which covers the company’s sustainability performance for the year 2023. This report has been reviewed and approved by the Board of Directors of the company 29.8.2024.

This sustainability report is available only in digital format and it is part of our annual reporting.

If you have any questions regarding our sustainability report or its content, please contact us through [reply@pankaboard.com](mailto:reply@pankaboard.com).



# Letter from CEO

**S**ustainability is a fundamental challenge that impacts us all. At Pankaboard, we are committed to our role in addressing this challenge by providing sustainable cartonboard products for a variety of applications. Despite a tough global market in 2023, characterized by decreasing demand and rising costs, and general instability, we are proud of the significant strides we have made over the past year in our sustainability efforts.

Through innovation and dedicated efforts, we have achieved progress in our sustainability targets. Our commitment to energy efficiency has been recognized with the EES+ certification, as proof of our continuous improvement in operational efficiencies and sustainable practices.

Innovation remains at the heart of Pankaboard's strategy. Last year, we successfully launched the new PankaKraft product family, a line of products designed to meet the highest standards of sustainability and performance. This launch underscores our ability to innovate and adapt in a challenging market environment.

Transparency in our sustainability efforts is crucial. This year, we are pleased to present our third sustainability report, which provides concrete metrics and detailed examples of our work, offering a clearer picture of the progress we have made and the targets we aim to achieve in the coming years.

As we look ahead, we are preparing for the tightening requirements from our customers, consumers and legislation and are proactively working towards meeting these. We remain focused on agile and resource-efficient operations, developing sustainable products, and being a responsible employer.

Together we work towards a more sustainable future!



Pasi Piiparinen, CEO







# Pankaboard as a company

Pankaboard is the world leader in virgin fibre speciality cartonboards, featuring high thickness folding boxboards and uncoated speciality cartonboards for various applications. Additionally, in November 2023 Pankaboard launched the latest update to its already unique product portfolio with introduction of kraftboards. Pankaboard offers high-quality cartonboard solutions for packaging, various graphical and industrial applications, and food service products. Typical end-uses are packaging applications requiring high thickness, stiffness, purity and visual characteristics.

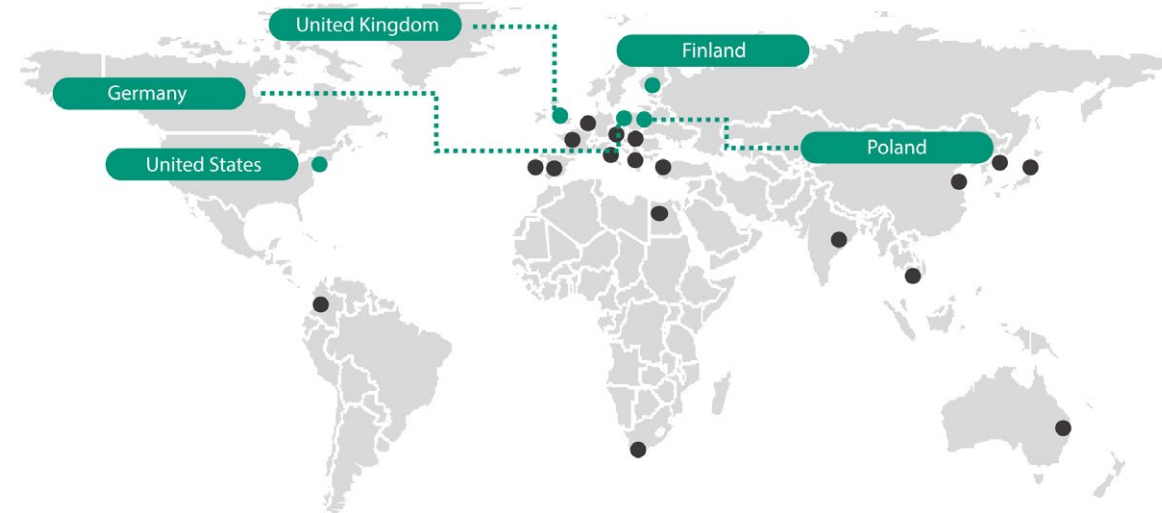
With an exceptional range of products, tailored service, and innovative spirit, we provide our customers with solutions for unique converting and end-use requirements. Our flexible operating model, our specialized high-quality assets and skilled personnel fulfil our customers' specific needs.

The Pankakoski Mill has operated for respectable period of over 110 years and was acquired by the current owners in 2006. The Mill is located in Pankakoski, Finland and we have sales in more than 60 countries. Pankaboard Oyj is the parent of the company group and Pankakoski Mill Oy and Panka-

board Deutschland GmbH are fully owned subsidiaries. Pankakoski Mill Oy is the heart of the operational activities. Our sales offices outside Finland are located in Poland, Germany, UK and USA. LLC Pankaboard, the Russian sales company, was liquidated during 2023.

In 2023, our turnover was 77.6 million euros. We have on average 170 employees at Pankaboard. The annual capacity of board production is 110,000 tonnes, consisting of both uncoated and coated virgin fibres products.

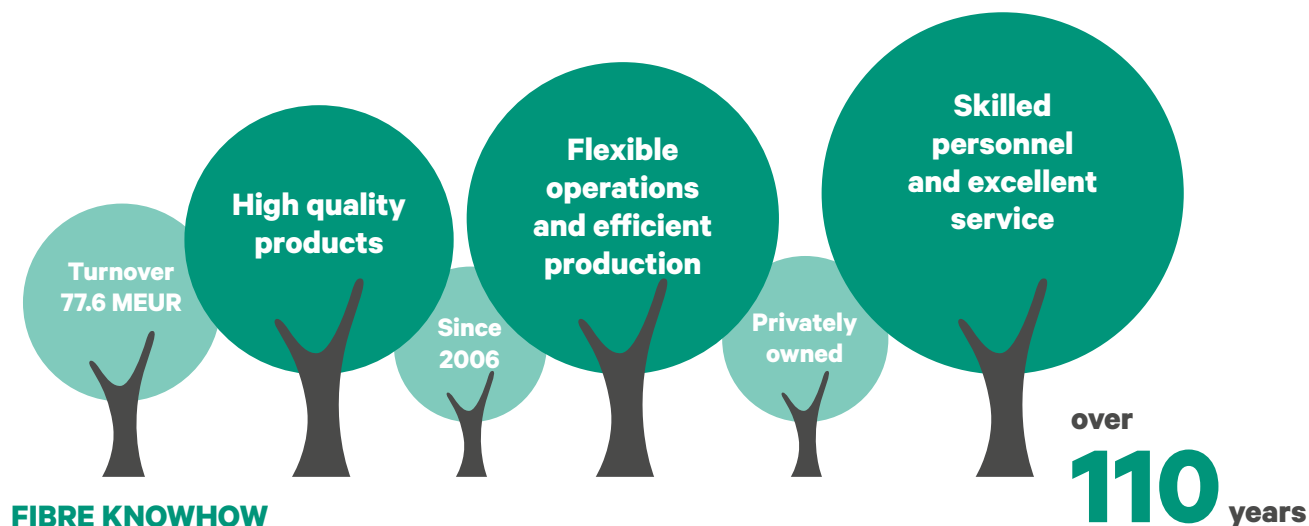
Our products are based on virgin fibre materials, which are 100 % traceable and, from sustainably managed, legal sources. Our tracing systems secure the chain of custody and cover the requirements of both FSC CoC/CW and PEFC CoC forest certifications. Pankaboard has certified ISO9001 Quality Management System, ISO14001 Environmental Management System and ISO22000 Food Safety Management System. In addition, as a recognition of Pankaboard's dedication to continuous enhancements in energy efficiency and compliance with specific energy efficiency standard requirements, Pankakoski Mill Oy was granted Energy Efficiency System (EES+) certificate in October 2023.



**5**  
sales offices

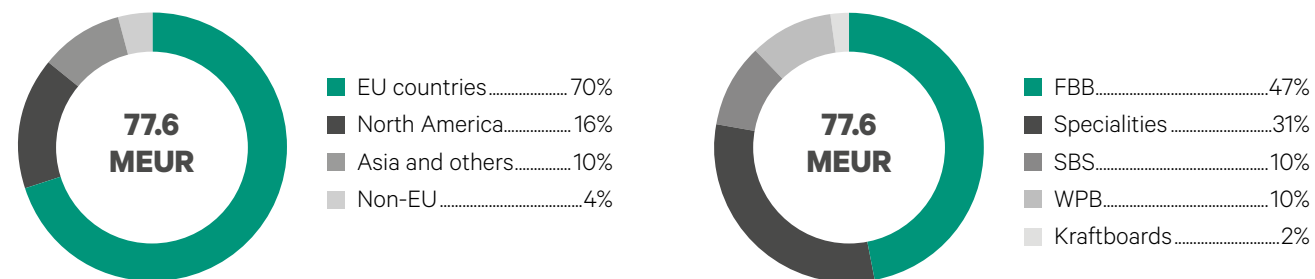
**65**  
delivery countries

**600**  
customers



We deliver our products worldwide. 74% of our sales are to Europe, and the remaining 26% to markets outside Europe, like USA and Asia.

#### Geographical & product turnover splits, 2023



## Company management

### In the financial year 2023,

#### Pankaboard Board members were:

- Dan Karlsson, Chairman of the Board, since April 2021
- Ian Halliday, Deputy Chairman of the Board, since April 2021
- Mikko Heinonen, Member of the Board, since August 2006
- Aarne Luukko, Member of the Board, since April 2021
- Lennart Simonsen, Member of the Board, since April 2021

You can find more detailed introductions about the Board members on our website [www.pankaboard.com](http://www.pankaboard.com)

#### Pankaboard's Management Team members were:

- Sampo Antti, CEO, August 2021–July 2023
- Pasi Piiparinen, Deputy CEO, June 2019–July 2023, Interim CEO, July 2023–November 2023, CEO, since November 2023
- Tiina Staljon, CFO, since May 2018
- Petri Saastamoinen, SVP Operations, since September 2008
- Arto Pekkarinen, VP Supply Chain & Customer Service, since September 2007
- Christer Nordman, VP Sales Development, Marketing & Products, since November 2009

## Our strategy, values and mission

**Our strategy** is to focus on virgin fibre speciality cartonboards, where we aim to be the first choice for our customers. We aim to grow faster than the market by actively seeking new end uses for our existing products and by developing our sales network on chosen core markets. We continuously improve our operational performance and develop our asset base by targeted investments. We also continuously assess possibilities to grow by M&A.

**Our vision** is to be global leader in sustainable and innovative high value-added specialty virgin fibre cartonboard.

#### Our core values are:

- Sustainable profitability
- Openness and Trust
- Agility and Continuous improvement
- Co-operation with our customers, suppliers, and other stakeholders for mutual benefit



# Our sustainability approach

Climate change is one of the biggest challenges the world is facing. Businesses such as Pankaboard are responsible for playing their part in reducing CO<sub>2</sub> emissions throughout their supply chain. The changing climate and upcoming new regulations create opportunities and risks for the business.

Packaging products play a vital role in reducing environmental impacts of goods and food that we all consume. Packaging protects the products from impurities, prolongs the shelf-life of food, and thus reduces the food waste.

Packaging protects the goods from damage in transport and handling and therefore prevents unnecessary waste. Fibre-based packing material is recyclable. Furthermore, smart package design (light weight, easy to stack) reduces logistics' emissions.

Sustainability is in the heart of our business and is embedded to all our processes and decision making.

An important part of our sustainability is the sustainabil-

ity of forests. Protecting the environment, energy efficient operations, reducing our footprint, and ensuring safe and fair working conditions for our employees are cornerstones of our activity. Our virgin fibre-based cartonboards are all renewable and recyclable. Our cartonboards with raw materials from well managed forests provide sustainable solutions for a wide range of applications. Close collaboration with our suppliers improves the efficiency, transparency, and responsibility of the entire supply chain. We use suppliers with the highest sustainability and ethical standards.

We are continuously working to keep our environmental impact as low as possible to mitigate the climate change. We utilize the principles of circular economy in all our production processes. Our raw materials are traceable and controlled.

In 2023, no incidents of non-compliance occurred considering environmental permit, laws, or regulations.

## Materiality analysis

A materiality analysis was conducted at the beginning of 2022. The material topics identified are based on their relevance to our business and stakeholders. Through the materiality analysis we can ensure that we focus on and invest in the most important sustainability aspects.

In the first phase of our materiality analysis, we longlisted relevant sustainability topics for cartonboard industry and our business. In the second phase, we identified the most relevant topics in a workshop, facilitated by a third party. The stakeholders' expectations included in the materiality analysis were based on our dialogues with different stakeholder groups. The material topics for Pankaboard are presented in on the right.

### Material topics for Pankaboard according conducted materiality analysis.



#### Agile and resource efficient operation

- Water consumption
- Circular economy



#### Desired employer & partner

- Employee engagement
- Health and safety
- Supplier commitment to sustainability



#### Climate change mitigation

- Carbon emissions
- Energy efficiency



#### Sustainable products

- Sustainable raw materials
- Certified raw materials
- Low carbon footprint of the products

## Sustainability roadmap 2024–2028

Based on the materiality analysis, Pankaboard has identified key focus areas in order to draw up a sustainability roadmap for the coming years to develop its sustainability work.

To draw up the sustainability roadmap 2024-2028, it was essential to map the current state and future intent of sustainability work. This was based on the double materiality assessment, which was completed in accordance with the EU Corporate Sustainability Reporting Directive (CSRD) in order to meet the tightening regulatory needs.



# Sustainability themes, targets, and progress

Based on the results from the materiality analysis, we have set Sustainability visions and ESG targets to achieve these visions. They were approved by the Board of Directors. The sustainability visions and targets help us focus our sustainability work and measure our progress. We will review them on regular basis in the future.

### Agile and resource efficient operations

We want to be agile and meet our customer demands and wishes. Circular economy and minimizing loss of resources is in the heart of our operations.

### Desired employer and partner

We want to be a desired employer and partner. Healthy and safe working environment is a priority for us. We want to increase employee engagement.

We want to be a trusted partner and build long-lasting relationships. Therefore, it is essential that all our partners act in accordance with our ESG policies.





### Carbon emissions / climate change mitigation

We want to contribute to climate change mitigations by cutting our own fossil CO<sub>2</sub> emissions as well as emissions of our products.

### Sustainable products

We use only sustainable raw materials. All our fibre raw materials are certified, and all our products are traceable.

Material sustainability themes for Pankaboard, including key targets and progress made during 2023.

Themes	Aspect	Targets	Progress
 <b>Agile and resource efficient operations</b>	Water consumption	<ul style="list-style-type: none"> <li>10% reduction in surface-water intake per production ton by 2024 (baseline year 2017)</li> <li>Fulfilments of environmental permit regulations (limits are yearly averages)                             <ul style="list-style-type: none"> <li>Wastewater Phosphorus, 3 kg/day</li> <li>Wastewater COD, 1,500 kg/day</li> <li>Wastewater Solids, 170 kg/day</li> <li>Wastewater Nitrogen, 40 kg/day</li> </ul> </li> </ul>	2023: 13% reduction since 2017  2023: <ul style="list-style-type: none"> <li>Phosphorus 0,8 kg/d</li> <li>COD 933 kg/d</li> <li>Solids 113 kg/d</li> <li>Nitrogen 15 kg/d</li> </ul>
	Engagement and wellbeing	<ul style="list-style-type: none"> <li>Active feedback from employee</li> <li>Response rate over 50% for employees in wellbeing survey</li> <li>Survey Yearly improvement in customer NPS (goal for NPS 40)</li> </ul>	2022: 46% (will be conducted in 2024) 2023: customer NPS 46
	Safe working environment	<ul style="list-style-type: none"> <li>Zero accidents</li> <li>Near misses and safety observations reported actively</li> </ul>	2023: 4 lost time accidents 2023: 221 pcs
 <b>Desired employer &amp; partner</b>	Supplier commitment to sustainability	<ul style="list-style-type: none"> <li>Supplier Code of Conduct approved by &gt; 80% of suppliers and service providers by 2024</li> </ul>	2023: process ongoing
	Carbon emissions	<ul style="list-style-type: none"> <li>90% of energy use coming from renewable energy sources</li> <li>Introducing an Environmental and Energy Policy</li> </ul>	2023: 95% 2023: process ongoing, finalization Q1 2024
	Energy consumption	<ul style="list-style-type: none"> <li>5% reduction in energy consumption by 2025 (MWh per production ton)</li> </ul>	2023: 3.6% energy consumption reduction achieved (from 2015 levels)
 <b>Climate change mitigation</b>			
 <b>Sustainable products</b>	Certified raw material	<ul style="list-style-type: none"> <li>100% traceable and from sustainably managed, legal sources (continuous target)</li> </ul>	Target achieved in 2023

# Managing sustainability

The Board of Directors has the highest responsibility of sustainability. Board of Directors is responsible for reviewing and approving the reported sustainability information, including material topics.

The senior management approves the operational policy, which combines Quality Management System (ISO 9001), Environmental (ISO 14001), Energy Efficiency (EES+), Food Safety (ISO 22000) and Forest Certification (FSC and PEFC Chain of Custody) Policies. They are also responsible for setting environmental goals, and an environmental management program. The senior management also sets the objectives and measures for the improvement of energy efficiency under the Energy Efficiency System (EES+) scheme. Senior management will ensure that staff are adequately informed about the environmental and energy impacts of their work. Senior management is responsible for ensuring that the necessary resources are allocated to the implementation, maintenance, and development of the environmental and energy management system.

The Energy Efficiency Team (EES+ Team) is chaired by the management representative appointed as the main energy efficiency officer, i.e. SVP Operations. The authorized purchase persons are responsible for the procurement of materials and chemicals and for identifying suppliers' environmental and energy requirements.

Our key operational management systems are based on Environmental Management System ISO14001, Quality Management System ISO9001, Food Safety Management



System ISO22000, and Energy Efficiency System EES+. Operational policy guides our operations related to management, environment, quality, energy efficiency and food safety.

Pankaboard Environmental and Energy Manual describes how Pankakoski Mill Oy has organized its environmental and energy management to ensure continuous improvement of environmental protection and compliance with the requirements of ISO14001 and EES+.

We comply with all applicable laws, regulations and high standards related to our products, processes and used raw materials. All our purchased and used raw materials are traceable and fulfil our own sustainability requirements and food industry standards. We use standardized processes and follow the delivery agreements. We constantly follow changing regulations and upcoming new demands affecting our business, with the help of Linnunmaa Lex legal services.

## Ethical business and governance

We are committed to ethical and sustainable business standards. Our Code of Conduct has been approved by the Board of Directors in April 2022. It sets the highest principles for ethical behavior and is our core policy. The Code of Conduct guides us with practical examples and advice so that we can make the right choices in our everyday work. Supervisors are expected to set an example and support employees in following the Code of Conduct.

Our Supplier Code of Conduct was approved in November 2022 by the Board of Directors. Supplier Code of Conduct covers following topics: Workplace Health and Safety, Environment and Safety Issues, Corruption and

Bribery, human rights (forced labor, disciplinary measures, child labor, discrimination) and reporting of non-compliance. The Supplier Code of Conduct is published on our website.

Our core policies, Code of Conduct, Supplier Code of Conduct as well as Operational Policy, guide our daily work in terms of sustainability. These policies are regularly reviewed and updated when necessary, by senior management. With the achievement of EES+ Energy Efficiency System in 2023, increasing emphasis has been set on energy efficiency as part of sustainable operations.

We are a trusted partner for our stakeholders, customers, employees, investors, and the community in which we operate. Pankaboard has an internal control system for compliance, financial and non-financial reporting, and operations. Commitment to honesty and ethical practices



is part of a company's control environment.

In 2023, we introduced a whistleblowing channel to promote transparency and openness within our organization. Through this channel, anyone—whether an employee or a contracting partner—can anonymously or openly report any suspected or observed violations of our ethical guidelines. The whistleblowing channel is intended to monitor compliance with our ethical guidelines and address any misconduct.

**Fair business**

We have zero tolerance for corruption and bribes. Business gifts are only acceptable when they are lawful, minor in value, given openly, and are consistent with common business practices. Everyone shall avoid and mitigate situations that give rise to or appear to give rise to a conflict of interest.

Pankaboard competes openly and fairly and does not tolerate any illegal cooperation with competitors. Pankaboard and all its employees must comply with all applicable antitrust and competition laws and regulations in all situations. Pankaboard ensures that all agreements with competitors, customers, distributors, and other business partners comply with applicable competition laws and regulations.

The financial and non-financial reporting information of Pankaboard must be up-to-date, current, accurate, complete, available, protected where necessary, verifiable, and retained. They must also comply with the requirements of the accounting principles, applicable laws, and regulations and Pankaboard's internal guidelines. Pankaboard complies with anti-money laundering obligations and all

applicable tax laws and regulations in the countries where it operates.

Employees must report suspected misconduct to their immediate supervisor, supervisor's supervisor, or other members of the company's management. There have not been any reported non-compliances in 2023.

Pankaboard does not participate in or otherwise support political activities, whether local, communal, or national, and does not make donations to political parties or groups.

**Fair treatment of people**

We promote fair treatment of people in various ways in our own operations as well as in the broader value chain. We value diversity and create a work environment where all team members can participate and develop. We do not tolerate discrimination against employees based on their racial or ethnic origin, age, gender, disability, sexual orientation, religion, family status, social background, political opinion, trade union membership or other similar characteristics. We respect human rights and human dignity and respect internationally recognized human and labor rights and standards, and local labor laws. We respect the rights and interests of local communities and avoid and minimize adverse impacts.

**Data security**

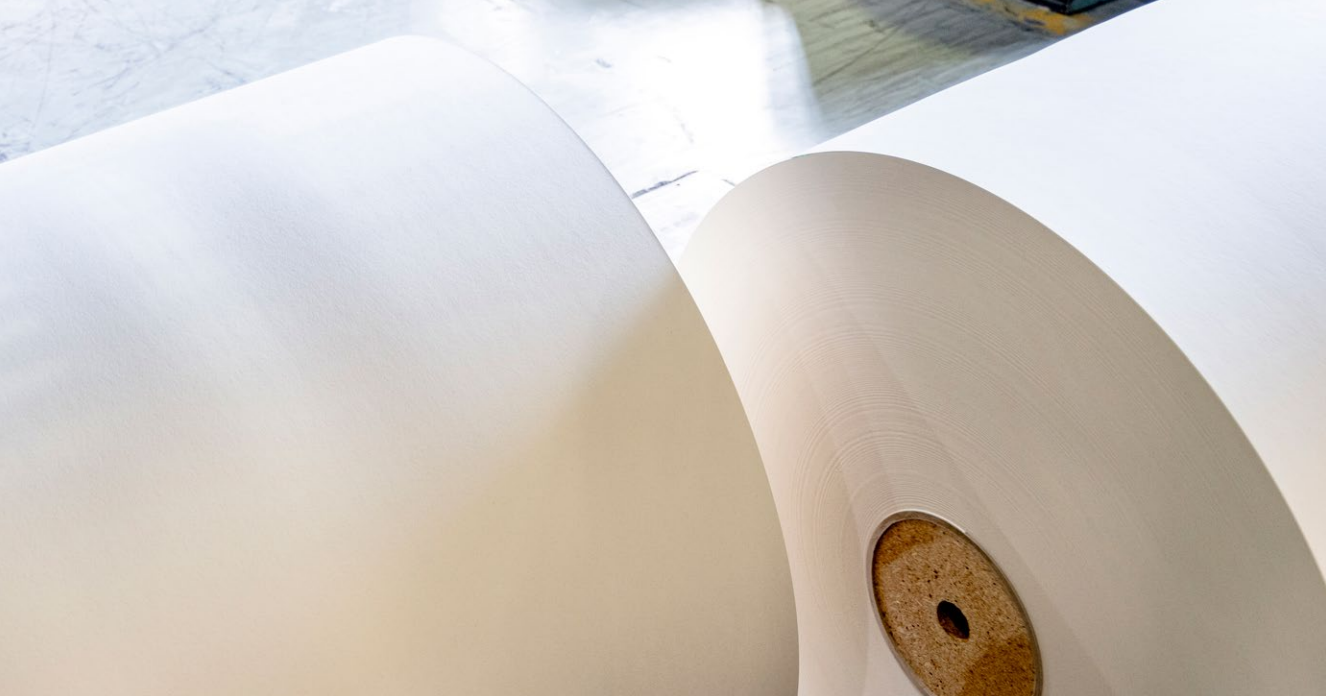
At Pankaboard, information security and data protection are important to our business. We are committed to continuously investing in the development, maintenance, and enhancement of our data security measures to secure our own, our customers', and our partners' privacy. Our objective

is to create and maintain a strong information security culture and data protection practices, ensuring high-quality services and a good corporate image.

Our data security policy provides clear guidelines for our daily operations, ensuring full compliance with applicable laws. These principles are mandatory for all Pankaboard

employees. The Board of Directors decides the strategic direction, organization, and resources for all aspects of information security, ensuring that our approach is comprehensive and effective.





## Supply chain sustainability

We want to ensure the sustainability of our entire production and supply chain. We expect our business partners to follow ethical standards like those of Pankaboard and to familiarize themselves with our Code of Conduct. Pankaboard will not conduct business with a supplier engaged in violations of fundamental human rights.

Pankaboard's sourcing decisions are made based on our company's interests, considering environmental, economic, and social aspects. Supplier performance and product quality is regularly monitored through e.g., complaint handling, customer surveys, laboratory tests and

with product quality analyzer. Operational guidelines for purchasing and the Supplier Evaluation Guidelines provide guidance on environmental considerations.

Certifications are one way of improving the sustainability of raw materials and products. Certifications are available from raw materials to end-use requirements. Pankaboard is committed to the continuous development of all processes related to certified production. We are committed to both major forest certification systems: PEFC and FSC® (FSC-C107457). The certificates for the chain of custody of wood-based raw materials, show that the wood and fibers used in Pankaboard's products come from sustainable sources and are fully traceable. Both PEFC and FSC® were audited in 2023 with positive results.

## Human and labor rights

In line with our Code of Conduct we respect internationally recognized human laws and labor rights. We follow all local labor laws concerning e.g. wages, working hours and minimum age limits for employment. We are also committed to comply with ILO (International Labor Organization) Declaration on Fundamental Principles and Rights at Work, International Bill of Human Rights, United Nations Global Compact as well as UN Guiding Principles on Business and Human Rights. These declarations set the bare minimum requirements and are important especially if local laws are inadequate.

We expect our suppliers and service providers (also tier 2 supply chain) to act according to the human rights and labor requirements and provide decent working conditions for their employees. We promote equality and diversity and ensure that workers receive equal pay for work of equal value.

## Managing environmental risks

The environmental aspects, risks, and hazards of all Pankakoski Mill's activities are identified at least every three years or when new information on environmental impacts or significant changes in operations becomes available. At the same time, environmental opportunities are identified, for example in relation to energy saving or eco-labelling.

The Safety Manager and production management, as well as others where appropriate, are involved in the identification of environmental concerns and risks. The assessment identifies the environmental aspects of products and activities that cause or may cause environmental stress, consume natural resources, pose a risk of accidents, cause a change in the ecosystem, or affect the functioning of society. The assessment focuses on the environmental aspects and impacts during production, as these are usually the ones that can be most effectively addressed. For significant changes, an assessment can also be carried out over the entire life cycle of the product.

For example, available research on the state of the environment and the environmental impacts of the forest-based industries can be used in the assessment. Other separate studies on the environmental impact of Pankakoski Mill will also be carried out where appropriate. A separate contingency plan has been drawn up in accordance with § 15 of the Environmental Protection Act to prepare for the most significant environmental risks. The contingency plan describes how environmental risks and incidents are to be identified.

The Mill's Management Team sets or reviews the company's environmental objectives annually as part of the annual planning process. Significant environmental aspects, legal and other requirements, stakeholder expectations and available technology are considered when setting the environmental objectives. In the product development phase, environmental aspects are considered, for example in terms of material and energy efficiency.





## Desired employer

At the end of 2023, we had 170 employees at Pankaboard of which 9 work abroad. At the end of 2023, 15% of our employees were female and 85% male. Average age in our organization in Finland was 43 years. In Pankaboard’s Management Team has five members, four members are male and one female. During 2023, no new employees were hired, and 8 employments ended.

We provide meaningful jobs and workplaces which our employees can be proud of. We focus on building safe working environment and culture where everyone can express their opinions. We encourage collaborative team working as we believe that together we can find more innovative solutions and ways of working. Pankaboard’s business also creates plenty of indirect jobs.

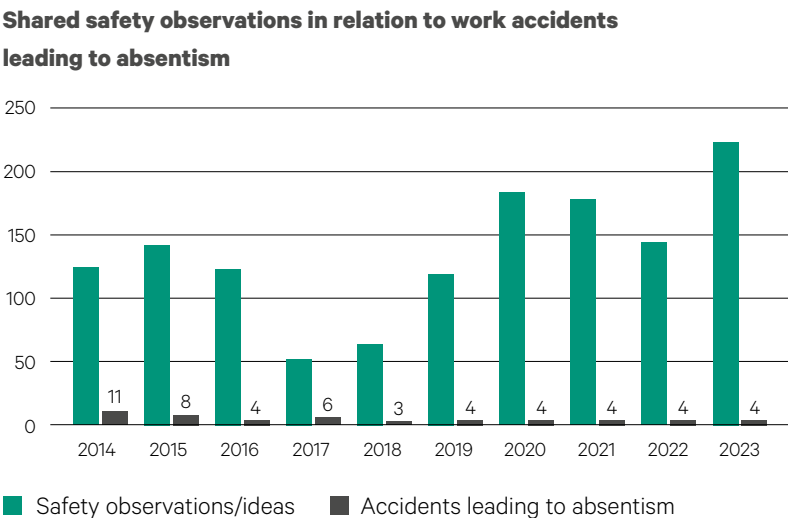
## Safe working environment

Safety of our employees is a key priority for us and the building ground of being a desired employer. We want to ensure healthy and safe working environment for all our employees and people visiting our mill and premises. We continuously develop our safety practices and actively build safety culture. We comply with all relevant statutory and workplace-related health and safety requirements. We believe that all accidents and work-related illnesses are preventable. We also promote well-being at work and strive to reduce absences due to sickness. Our goal is to minimize the impact of work-related risks. The ultimate goal is zero accidents, and we work hard to achieve it.

Our safety management system is described in Pankaboard’s Safety manual. The development of our safety work and health and safety related topics are reviewed at least once a year by Pankaboard Management Team in management reviews.

We continuously follow our safety development through safety indicators such as work-related accidents and loss of workdays due to accidents. We also measure safety observations done by our personnel (see the adjacent graph). All the accidents and observed safety improvement ideas are carefully investi-

gated, and corrective actions are planned and carried out. The accidents are also communicated with the personnel to prevent their recurrence.



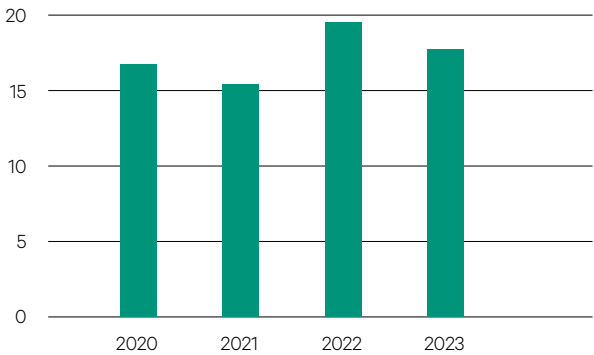
Our safety work is based on the risk management and the preventive safety work. Our mill is regularly inspected to identify any safety risks and safety improvements ideas. The employees are encouraged to report any safety issues or shortages, observed hazards and to share their safety improvement ideas by rewarding the best idea monthly with a paid day off. In 2023, one rewarded safety idea was related to a malfunctioning manual valve on the caustic soda tank of the fiber furnish analyzer. The idea improved the safety of the work environment, as the entire caustic soda piping in that area was updated to a better suited system.

All the new people (Pankaboard's own and external employees) are instructed on safety working methods and principles. Own employees get specific safety trainings depending on their job description. All Pankaboard employees are required to complete Occupational Safety Card training, which enables them to identify hazards and risks in workplace. In addition, staff receive training in fire safety and first aid procedures. Due to the measures taken, employee education and awareness on safety have been significantly increased. Safety has been improved also by e.g. upgrading safety equipment and having first aid trained staff as well as members of the factory fire department present on shifts.

In 2023, there were 4 work related accidents resulted in absence. We have been able to keep the accident level low from 2016 onwards after implementing special measurements and procedures.

**In 2023, one rewarded safety idea was related to a malfunctioning manual valve on the caustic soda tank of fiber furnish analyzer. The idea improved the safety of the work environment, as a better suited system was updated in place of the manual valve.**

**Lost Time Accidents (LTA), 2020–2023**  
Number of LTA/mio working h



■ LTA

Development of work-related accidents at Pankaboard during 2020-2023. A lost time accident is a workplace incident that produces an injury that results in an employee missing time on the job beyond the date of injury. The rate is calculated per million working hours.

# Engagement and well-being

We believe that meaningful assignments, balance with the work and the private life and clear responsibilities are a basis for employee well-being. We want to create inspiring and rewarding working culture by encouraging our employees to work together and share their knowledge to find new ways to work, communicate and innovate. We provide different kinds of professional education possibilities for our employees based on their own interests. We value professional leadership and personal development according to our operational policy. Our goal is to create a work culture that emphasizes performance among the personnel and to gain an entrepreneur spirit to our team.

We also believe that equal opportunities and mutual respect are vital in building well-being in working community. We value diversity and treat all our employees fairly, regardless of age, gender, health, or other personal factors. The remuneration for each position is based on the collective agreement, experience and skills, pay structure and/or seasonal pay agreement applicable to the post in question and does not discriminate on grounds of gender or any other personal factors.

In order to maintain skilled personnel, development and recruitment of personnel are crucial. All the new employees go through a task-specific induction program.

In addition, task-specific job guidance instructions are used to teach the new person the correct and safe ways to perform the job.

At Pankaboard we have a leisure committee focusing on coordinating free time activities supported by the company. We also support the physical well-being of our employees by supporting their sport activities monetarily.

Absence rate is followed annually, and the target is to decrease it. In 2023, absence rate due to sickness was 6.2% of the total worktime. The figure was raised by several corona clutches in the Pankakoski Mill.

Future-proofing our business requires investing in timely and high-quality training. Training also creates social wellbeing and can increase engagement to work. We train local employees in cooperation with personnel representatives and authorities. Pankaboard supports research and development related to its field and cooperates closely with educational institutions.

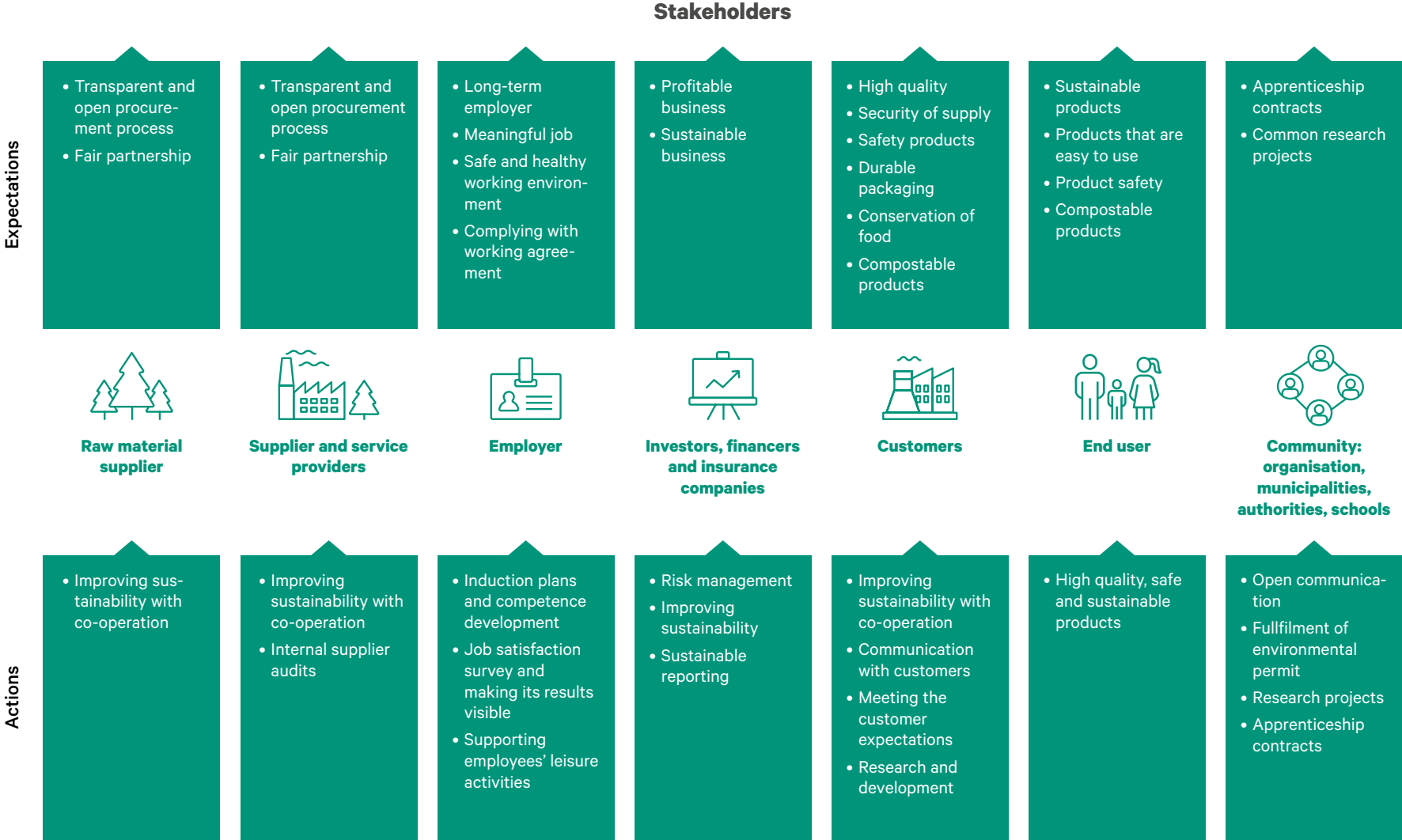
We follow the wellbeing and satisfaction of our personnel regularly with a personnel wellbeing survey. Latest survey was conducted in 2022, with improved response rate, especially among blue collars, compared to previous survey in 2017. The survey was carried out by an independent third party, Feelback Oy, and it dealt with various themes including the motivation to work, work community, satisfaction to leadership and management, among others. Environmental and social sustainability were also touched upon as their own themes. With the survey, we identified some improvement areas which we have worked on during 2023. Development areas include company level communication, employee empowerment, and employee wellbeing. In the future, the survey will be conducted every second year, the next will be in 2024, including the same basic elements.

Throughout the year our personnel have a chance to express their views about the points needing attention or corrective actions via various channels, such as a whistle-blowing channel.



# Stakeholders and value creation

We want to be aware of our stakeholder's needs and expectations in order to understand our impacts and improve our operations. We understand that open dialogue and active communication with our stakeholders is important part of building sustainable business for today's and future needs. Maximizing value creation and positive impact on our different stakeholders is also key aspect when creating profitable business. As part of our sustainability work, we have identified our main stakeholders, their needs, and expectations (see the adjacent figure). Stakeholder feedback is regularly handled in the senior management level. Stakeholder analyses is reviewed on annual basis.



# Customers and end users

Pankaboard has wide customer base with approx. 600 active customers in over 60 countries. Pankaboard works closely with the customers to ensure individual service and to fulfil specific customer needs. With our wide product offering we help our customers to find solutions for their diverse converting and end-use requirements. Continuous product development and finding new ways of using our products are the cornerstones of Pankaboard's business. Our operating model supports a specialized product offering and close cooperation with customers ensuring individual service and flexibility.

We provide solutions to help our customers to improve their own sustainability. We create value by providing low-carbon packaging solutions which are recyclable, including a compostable product (PankaPlex). Our customers can rely on our products to fulfil their high-quality expectations and efficient service.

We use customer surveys to identify further operational development needs. Also, the complaints and customer feedback are constantly monitored, analyzed and corrective actions are carried out when needed. We do constant preventive actions to reduce complaints and further improve the customer satisfaction. As a result, technical complaints have been declining quite constantly since 2014. In the latest customer survey in 2023, no particular area was identified as major concern. The goal is to improve the Net Promoter Score (NPS) of our customers and the overall customer satisfaction year by year. The

customer satisfaction survey is conducted annually, and the results are monitored by the management and Board of Directors.

## Financiers

We create value to our investors by ensuring a profitable and sustainable business model. Our focus is on developing business areas and products with significant future potential. We actively seek new markets and customers, while also exploring innovative ways to leverage our existing products and services. Our business is rooted in the principles of the circular economy, with highly resource-efficient processes, so no excess wastage is created. Effective risk management is central to our operations, supported by ongoing contingency planning to secure our business continuity.

## Suppliers and service providers

To promote our sustainable business, the whole supply chain needs to fulfil the high sustainability standards and requirements. We are aware that actions of our partners and suppliers influence our business and how our other stakeholder assess our sustainability. By working together with our world class suppliers, raw material providers and service providers we are able to improve the sustainability of our operations and the whole upstream supply chain. We actively communicate with our suppliers and measure their performance and quality of products purchased. We

conduct audits regularly for our key suppliers. We also perform regular traceability exercises in cooperation with our customers.

Pankaboard seeks to ensure that all our suppliers operate in compliance with the terms and standards of our supplier Code of Conduct. In case of non-compliance with some of the standards in our Code of Conduct, Pankaboard will help to secure a program of steady improvements. (Read more about the ethical guidance of our Code of Conducts in chapter [Ethical business and governance](#)).

## Local communities

Schools, universities, and authorities are our main societal stakeholder groups. We follow and comply with all environmental regulations and act according to the requirements set in the environmental permits. Our activities are constantly monitored by the authorities. We continuously follow the wastewater values and emissions to air to meet the environmental permit targets. The compliance with the permit is followed through self-monitoring and independent third-party environmental monitoring.

We take the communication with our factory neighbours seriously and handle possible complaints with care. During 2023, we had no incidents that caused public concern.

We actively work with vocational schools and provide apprenticeship contracts and summer jobs for students. These agreements are beneficial for the students and for Pankaboard; students will learn a profession while working and Pankaboard gets future's talents and motivated



workforce. A personal training plan is drawn for each of the students. The aim of the training is to complete a vocational qualification for a board manufacturer. We also offer summer jobs for students in the postgraduate phase.

We are an active member in several industry associations and other organizations:

- Pro Carton
- Cepi Cartonboard
- Finnish Forest Industries
- Finnish Association of Purchasing and Logistics, LOGY
- Pohjois-Karjalan pelastusalan liitto
- Paper and Board Association UK
- Finnish Packaging Recycling, RINKI (Suomen pakkauskierrätys)
- European Carton Makers Association, ECMA
- North Karelia Chamber of Commerce

We are also proud to support local culture and art – during the past years we have for example supported Lieksa Brass Week Musical Festival and Lieksan Hurtat sports association.

Pankaboard's Code of Conduct as well as Supplier Code of Conduct work as tools to improve the supply chain transparency and responsibility



## CASE

# Career path: Summer trainees

Pankaboard annually employs students and apprentices, offering them valuable internships and summer trainee positions, that are crucial for both their studies and work experience. These opportunities also include chances to complete final theses at Pankaboard. Trainee positions provide students with a meaningful way to apply their knowledge in practice, showcase their skills, and potentially pave the way for a career at Pankaboard.

Here are two examples from our summer trainees career paths:



**Eetu Kuivalainen**, a dynamic young man hailing from Lieksa, is on the verge of completing his degree in mechanical and production engineering at Savonia University of Applied Sciences. He has been studying there since 2019 and is set to graduate by the end of 2024. Besides his summer job position, Eetu is currently in process of doing his thesis for Pankaboard, which is focusing on optimizing the use of sealing water in process equipment.

Eetu's academic journey has centered around production technology, particularly in the paper industry and maintenance. He has also deepened his understanding of pulp and paper technology through additional studies. His passion for paper processing emerged after high school, when he worked for a local company where printing of paper was part of the activities. This experience sparked his interest in the technical aspects of the industry, leading him to pursue higher education in Kuopio.

After his first year of studies in Kuopio, Eetu secured an internship at a local board mill, gaining practical experience in their finishing department. This experience paved the way for his long-term involvement with Pankaboard, where he first joined as a summer trainee in 2021 in the finishing department. Since then, he has worked with the company alongside his studies, taking on increasingly responsible roles. In the summer of 2023, Eetu stepped into the role of shift supervisor, a position he has now held for two consecutive summers.

As a shift supervisor, Eetu manages production schedules, ensures product quality, oversees production staff and workplace safety, as well as handles material orders. His role also includes supervising maintenance personnel during non-day shifts. The rotating shift work, which includes morning, evening, and on-call night shifts, has been both demanding and rewarding.

Eetu describes his work at Pankaboard as interesting, varied, and positively challenging. He credits the supportive work community for his long-term commitment to the company, where he has been able to apply his academic knowledge and gain valuable hands-on experience. Eetu sees Pankaboard as a place with excellent opportunities for career development, making it an ideal environment to grow both professionally and personally.

**Suvi Kinnunen** has been working as a Sustainability and Development Coordinator at Pankaboard during summer period 2024. She's on a path to becoming an energy and environmental engineer in 2025, as she is studying at Karelia University of Applied Sciences. Her role at Pankaboard aligns closely with her academic focus, bridging her passion for environmental and energy issues with practical experience in the board industry.

Suvi's journey has been diverse. After graduating from upper secondary school in 2017, she worked in various industries, including the plastic products, pharmaceutical, and postal sectors, before realizing that she preferred practical learning over academic pursuits. This realization led her to choose Energy and Environmental Engineering as her field of study, driven by her lifelong interest in sustainability and energy efficiency.

As she enters her final year of studies, Suvi is preparing to write her thesis, likely focusing on sustainability, the circular economy, or life cycle assessment—areas she wishes to explore professionally post-graduation. Pankaboard is the planned client for her thesis, solidifying the strong connection between her academic work and her current role in the company.

Suvi joined Pankaboard with limited knowledge of the board industry but quickly immersed herself in under-



standing both the production processes and the relevant legislation. Her primary responsibilities have involved quality development and sustainability, particularly life cycle assessment. This work requires meticulous data collection on electricity and water consumption, waste generation, and emissions, which are critical for assessing the environmental impact of Pankaboard's products. Additionally, Suvi has coordinated updates to relevant company guidelines.

Pankaboard's commitment to energy efficiency and sustainability resonates with Suvi, who appreciates the company's certified energy efficiency and environmental management systems. She also values the company's close-knit work community, where long-serving colleagues readily share their extensive knowledge to newcomers.

Suvi finds her work at Pankaboard both challenging and rewarding, particularly in the realm of sustainability. She is inspired by the opportunity to learn new skills, explore creative solutions, and see the tangible impact of her work in the company's operations.





# Agile and resource efficient operation

Pankakoski Mill has two board machines:

- Board machine 2 (BM2), trim width 3.060 mm, capacity appr. 65,000 t/a
- Board machine 3 (BM3), trim width 2.250 mm, capacity appr. 45,000 t/a
- The Mill also has integrated groundwood pulp production and an integrated biofuel steam plant (outsourced)

Pankakoski Mill's operation is based on resource efficiency and circularity. The main goal is to recycle all the production waste, and all used water is purified and returned to the nature. By saving resources and working efficiently we produce less waste, raw material usage is optimized, and valuable resources are not discarded.

In 2023, the Pankakoski Mill used 99 958 m<sup>3</sup> wood as raw material, out of which we produced 64.6 tons of cartonboard.

## Waste

Circularity is the basis for everything we do. Our goal is to reach highest material efficiency and thus reduce waste. By using material side flows we can reduce the amount of material discarded or incinerated. All the waste is sorted and if possible reused and recovered. For example, the fly ash from the biofuel boiler has been utilized in the structures of the field and noise barrier. Materials that cannot be used in production are used to generate energy whenever possible. In the case of Pankakoski core processes, all combustible production waste formed in the production processes goes to energy production to the neighboring biofuel steam plant, which provides steam to the production plant. All production waste is reused, recycled, or combusted with energy recovery.

## Water usage and wastewater generation

In addition to CO<sub>2</sub> emissions, water usage and wastewater of our production have the most impact on the environment. Cardboard production is water intensive: it uses a lot of raw water and creates wastewater. Most of the raw water is used in the production process. It is vital to invest in water efficient operations and constantly reduce raw water usage. We purify all our used raw water and return it back to Lieksa river.

The Pankakoski Mill uses raw water from the Lieksa river as well as chemically purified water from the river in process waters. In addition, the Mill uses municipal tap water. The plant uses about 2.34 million m<sup>3</sup> of raw water annually, of which 1.99 million m<sup>3</sup> is purified and released as wastewater back to Lieksa river. The raw water consumption has decreased by 14.8% in year 2023 compared to previous year. Municipal water consumption has been around 1% of total water use, or 24,000 m<sup>3</sup> per year.

We work closely with the environmental authorities and any deviations are reported to the authorities in the monthly wastewater report. The effects of the plant's emissions on water bodies are monitored by participating in the joint monitoring of the Lieksanjoki - Pielinen Mönninselkä area together with the City of Lieksa and Savon Taimen Oy.





# Sustainable products

Sustainability is at the core of Pankaboard's operations and products. All our products are made from renewable materials and are recyclable (see end uses for cartonboards in the adjacent figure). We have integrated principles on circular economy into our product development and processes. Our goal is to use sustainable raw material as efficiently as possible. We use only certified fibre raw materials, and we prioritize renewable materials with low CO<sub>2</sub> footprint.

Pankaboard's production meets the key quality and environmental standards for the paperboard industry. The company is committed to continuous development of all processes. Pankaboard has a certified management system based on the following:

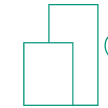
- Quality standard ISO9001
- Environmental standard ISO14001
- Energy Efficiency System EES+
- Food safety standard ISO22000 according to the HACCP-requirements.
- Pankaboard is committed to both major forest certification schemes:
  - The Programme for the Endorsement of Forest Certification PEFC
  - Forest Stewardship Council FSC® Chain of Custody and Controlled Wood

Certified management systems for the chain of custody of wood-based raw materials show that all the wood and fibre used in Pankaboard's products come from legal, sustainable, and well managed sources and are 100% traceable. In addition, in 2023, two cartonboard grades (PankaBrite and PankaPlex) had the inspected board status of Nordic Ecolabelling and one cartonboard grade (PankaPlex) has OK Compost certification both for home and industrial compostability.

## End-uses for Pankaboard's cartonboards



Food trays and skin pads



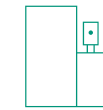
Food packaging



Luxury beverage



Healthcare



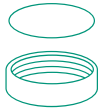
Beautycare



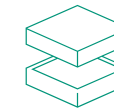
Food service



Food underlays



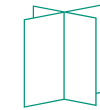
Capseals



Rigid boxes



Picture frames



Displays & laminates



Coasters



Skin packaging

# Product safety

Pankaboard products are clean and hygienic. All board grades produced by Pankaboard are manufactured from fresh fibres. Pankaboard is highly committed to product safety and its continuous improvement. All raw materials used in board production are approved for food contact. In the approvals, possible health risks have been considered. Pankaboard's products are regularly tested against major European and US food safety regulations. In addition to pure and clean raw materials, the drying technology used on BM3 (Condebelt®) makes the products microbiologically very pure thanks to the high temperature used in the drying process. Condebelt® gives unique surface and strength properties to the board. Our product category PankaPlex (< 240 gsm) is also certified compostable both at domestic and industrial scale. We take all complaints seriously and scrutinize each of them carefully, and refund when necessary. Complaints may be related to for example late delivery, product quality or impurities in products. Complaints provide us valuable information improvement measures are taken based on complaints.

Food safety of products is monitored through different indicators: compliance testing, recalls, customer feedback and reclamations as well as internal observations. To make sure we fulfil the regulatory requirements, we analyze and make risk assessments for substances commonly known to be harmful to health. We also keep the know-how up-to-date related to the materials used in the manufacture of contact materials and associated regulation. Monitoring, including traceability of e.g. raw materials and additives, is important. Food safety management system

## Our products fulfill highest safety standards

- 1. Hygiene**  
Manufacturing follows good manufacturing practices  
Strict hygiene also required from subcontractors
- 2. Odor and taint**  
Neutrally allows direct food contact  
Robinson test max. 1.5 for one year
- 3. Purity**  
OBA free  
Microbiologically pure and no contaminants
- 4. Consistency**  
High quality virgin fibre raw material and clean water



has met requirements in 2023. No substances that appear in the REACH candidate list of SVHC (Candidate List of Substances of Very High Concern) are present or used in our products.

## Material efficiency

Material efficiency and reusing of materials are the key principles of our production. By reducing material usage,

we can reduce our environmental footprint as well as reduce costs. 90% or more of the composition is organic fibre material. Only 10% or less is inorganic material, mainly minerals. Based on the composition, boards are classified as biodegradable.

Pankaboard's products are fully recyclable, and they can be reused as raw material several times. The ground-wood pulp gives favorable properties to the products because of the stiff and high-quality fibres. As a result of

the high bulk, the amount of material can be minimized to reach the required thickness and stiffness requirements. This leads to light and sustainable products as well as more sustainable value chain.





## Zero-C product family

To help our customers to achieve their sustainability targets, we have developed the Pankaboard Zero-C product family: CO<sub>2</sub>-neutral versions of our selected high-quality cartonboard products. We offer a wide range of traditional Pankaboard products with carbon-neutral Zero-C options, which have their fossil carbon emissions compensated. A comprehensive life cycle assessment (LCA) based on ISO14025 standard has been conducted for all Pankaboard products, and it is used as basis for Zero-C products. The analysis identified the climate impact of the products throughout the life cycle. In accordance with the product category rule for cartonboard products, the calculation took into account mandatory emission sources from upstream processes (e.g. production of raw materials and materials), emissions from our own core activities (e.g.

logistics, product manufacturing, waste management in the production process) and downstream processes (distribution of products and management of packaging waste during transport).

The results of the LCA have been documented in the environmental product declaration (EPD) report verified by a third party, which was published in 2022 (validity until 2027). The average fossil emissions of Zero-C products were around 650 kg CO<sub>2</sub>e/ton of product. However, wood-based carton packaging contains biogenic carbon, which was estimated to be as high as -1,000 kg CO<sub>2</sub>e/ton of product. In the adjacent figure fossil GHG-emission are represented per product category.

When considering fossil GHG emissions only, the upstream module accounts for most of the emissions for other products and the core module for the SBS boards. In the upstream processes, most significant sources of

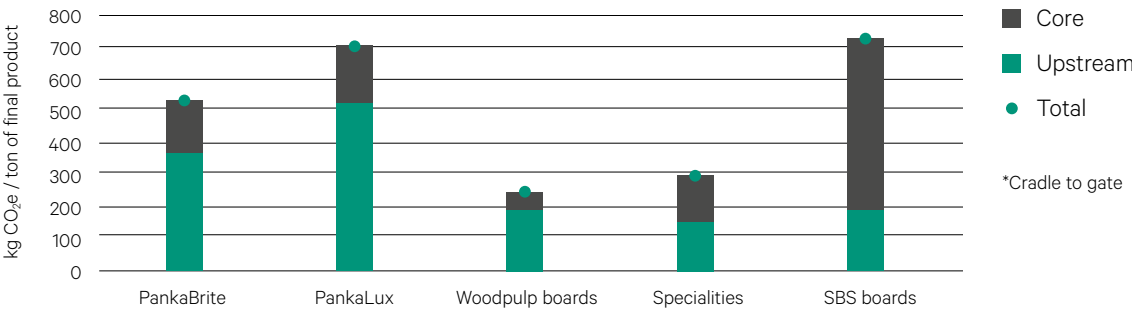
fossil GHG emissions are e.g. calcium carbonate and latex production for PankaBrite and PankaLux, and calcium carbonate and alkylketene for woodpulp boards and specialities. In the case of SBS boards, most significant fossil GHG emissions arise from the core processes from the production of the purchased pulp, which constitutes most of the products' mass. For all products or product groups, the upstream module is the most relevant life cycle stage for most impact categories except water use. In the case of SBS boards, the core module is more emphasized in terms of various environmental impact categories compared to other studied products.

For Zero-C products, we will compensate all manufacturing-related fossil CO<sub>2</sub> emissions in full, through certified compensations programs. The total amount of offsetting does not take into account the biogenic carbon already sequestered in the products (the emissions would be negative if biogenic carbon was included). To ensure and enable that we achieve our targets with the Zero-C product

family, we have partnered with Nordic Offset (NB. Nordic Impact since May 2024), a trusted Finnish provider of carbon footprint management. Carbon emission compensations are carried out in co-operation with Reforest, through high quality certified compensation programs from Verra VCS (Verified Carbon Standard). We also actively seek solutions to reduce fossil emissions from our operations and products.

Challenges with local wood raw material availability continued in 2023, due to Russian war in Ukraine. Therefore, we had to find alternatives especially for locally produced birch pulp. As a solution, Pankaboard has increased the use of softwood pulp and established import of eucalyptus pulp from South America. To assess impact of this change in fiber raw materials on our carbon footprint, updated LCA calculations will be carried out during 2024, and new PankaKraft products will be also included in this analysis.

**Fossil GHG emissions of Pankaboard cartonboards\***





## Climate impacts

As stated before, climate change is one of the biggest challenges the whole world is facing. We at Pankaboard are continuously trying to find ways to reduce our own carbon emissions by improving energy efficiency, using renewable energy, enhancing material efficiency, and manufacturing products with low carbon footprint.

Energy purchased for our production (scope 2 emissions) would be one of the biggest single CO<sub>2</sub> emission sources if majority of our energy need was not covered with CO<sub>2</sub> free energy. Our target is that 90% of our energy use comes from renewable energy sources. Pankaboard's production uses mostly local wood materials while the integrated biofuel steam plant uses mostly wood-based side-streams and production surplus to provide energy for the factory.

To reduce our product's carbon footprint, we need to be aware of the CO<sub>2</sub> emissions profile of our products. During 2021-2022 we conducted a LCA (life cycle assessment) project to all our product families (read more in chapter [Zero-C product family](#)). This LCA study concerned five different Pankaboard high-quality specialty cartonboards, two of which are assessed on the product level and three on the product group level:

- Folding boxboards: PankaBrite (product level assessment)
- Folding boxboards: PankaLux (product level assessment)
- Woodpulp boards (product group level assessment)
- Specialties (product group level assessment)
- Solid bleached boards (product group level assessment)

Updated LCA study will be conducted in 2024. This study will include product level assessment of new PankaKraft products.

## Energy efficiency

Cardboard producing process is energy intensive. The production processes require mainly thermal energy for drying of cardboard. At Pankaboard, the thermal energy is generated at the mill by using mainly locally sourced biofuels, such as bark from the pulp wood and recycled fuels and to a lesser extent from heavy and light fuel oil. The share of biobased and recycled fuel has been around 98% of total thermal energy consumption.

Pankakoski Mill uses an Energy Efficiency System EES+ for continuous improvement of energy efficiency. EES+ is integrated into the existing management systems. An energy inspection was carried out by independent third party Sweco at Pankakoski Mill Oy in 2022. Various energy efficiency improvements, mainly process optimizations and new equipment investments, have been done during 2023 and are continued during 2024.

Energy consumption increased slightly in relation to net production tons in 2023. In absolute terms, however, the consumption of electricity and steam decreased (-18 %) from the previous year and continues to be lower than before. Voluntary Energy Efficiency Agreement targets for energy savings in the 2015-2025 contract period, with an intermediate target in 2020 of 3% savings from 2015 levels and an overall target in 2025 of 5% savings from 2015 levels. Target is measured in terms of energy intensity (MWh per production ton). In 2023, 3.6% energy savings from 2015 levels was achieved, so the target is exceeded.

Pankakoski Mill Oy purchased electricity from Väre Oy until August 2023 and Pohjois-Karjalan Sähkö Oy from August 2023 onwards, and liquid gas is supplied by Neste Markkinointi Oy. Steam is purchased from Adven Oy from the biofuel plant on the mill site. Steam is mainly produced from wood waste material and other recycled fuels.

## Emissions to air

In 2023, Pankakoski Mill CO<sub>2</sub>e emission measurement was carried out by a third party. According to the results, the emissions meet the environmental permit limits. Compared to year 2022, the absolute emissions stayed the same in 2023. Emissions reported include the direct CO<sub>2</sub>e emissions of Pankakoski Mill production. The fuels used include recycled energy waste from the factory, wood-based waste and by-products, propane, heavy and light fuel oils.

Read more about our product related fossil emissions in chapter [Zero-carbon product family](#).





[www.pankaboard.com](http://www.pankaboard.com)