

**SPINNOVA®**

2021  
ANNUAL REVIEW

The graphic features the year '2021' in a large, bold, sans-serif font. The '20' is on the left, and the '21' is on the right. The '21' is enclosed within a thin black circular outline. A curved arrow starts at the top of the circle and points to the right, ending just above the '21'. Below the '21' and inside the circle, the words 'ANNUAL REVIEW' are written in a smaller, all-caps, sans-serif font.

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# This is Spinnova

Spinnova's mission is to produce the most sustainable textile materials in the world for the benefit of the environment and humanity.

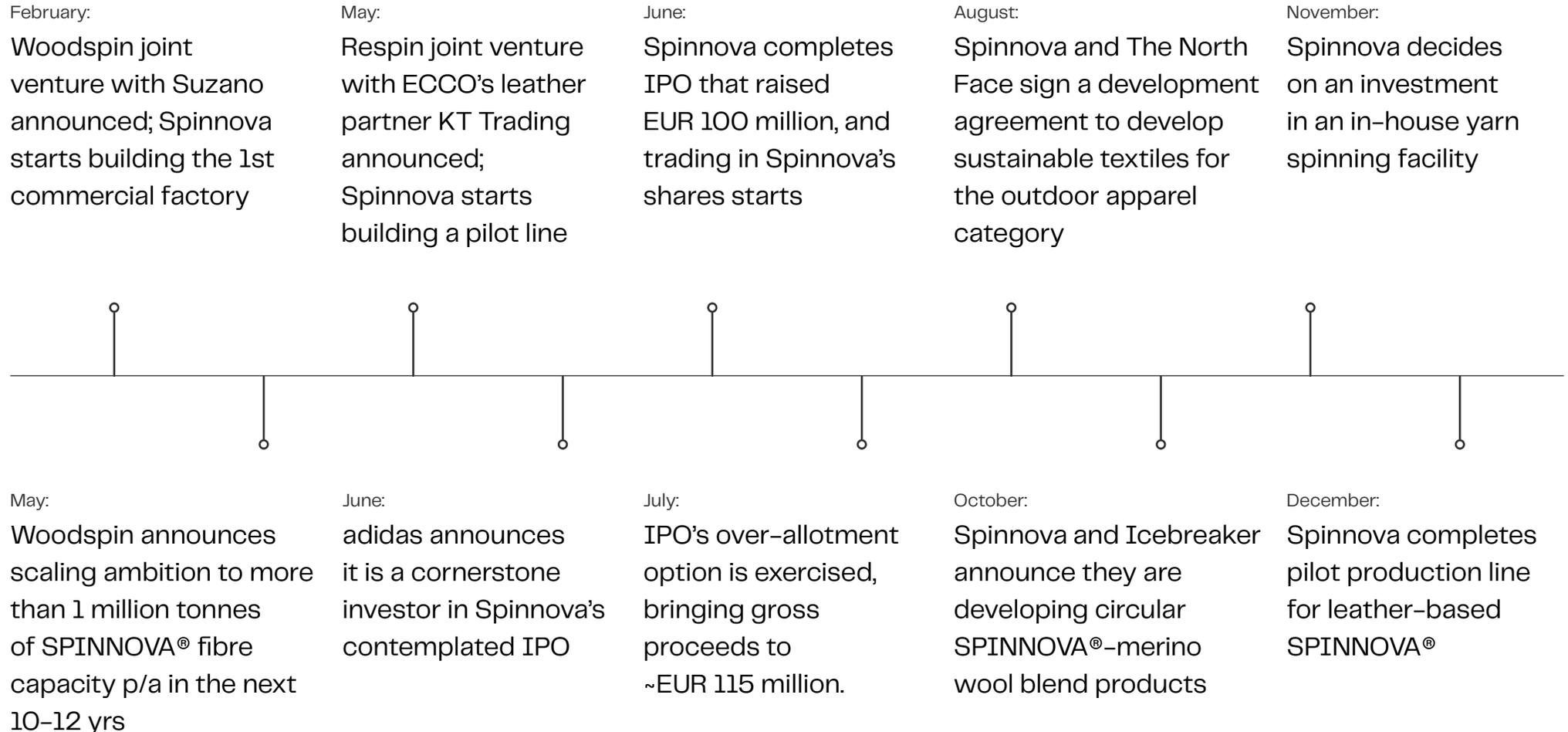
Spinnova is transforming the way textiles are manufactured globally. We have developed a technology for a new, mechanically processed textile fibre that provides a sustainable alternative to existing materials. Spinnova is not just an incremental improvement to existing fibres, but a versatile technology platform for producing sustainable fibre without dissolving or using harmful chemicals. SPINNOVA® is the most natural man-made fibre, and its properties and comfort of use are comparable with natural textile fibres, such as cotton and linen.

The same technology can be used to make fibre from multiple raw material inputs, including wood pulp and the waste and side streams of several industries. SPINNOVA® fibre creates zero waste, side streams, or microplastics, and its CO<sub>2</sub> emissions and water use are minimal. SPINNOVA® materials are quickly biodegradable and circular. Spinnova is committed to using only sustainable raw materials, such as waste and FSC-certified wood.



# Highlights of 2021

In 2021, Spinnova took a giant leap forward in commercialising its fibre and ramping up production. Spinnova's shares were listed on the Nasdaq Helsinki First North marketplace and capital was raised to support the implementation of our growth strategy. We also announced multiple collaborations with world-leading brands and proceeded with the commercial factory project in Finland with our strategic partner Suzano (Suzano S.A.).



# CEO REVIEW

## HOW DID 2021 TAKE YOUR STRATEGY FORWARD?

– All three focus areas of our strategy were taken forward in 2021. We made the first technology deliveries to our joint ventures, started building a commercial factory for the Woodspin joint venture with Suzano, and completed a pilot line for Respin, our joint venture with ECCO's leather partner KT Trading. We also decided on our own spinning line investment to speed up our fabric development and streamline product development with brands.

During 2021, we were proud to announce that adidas, the H&M Group and The North Face joined us as brand partners. Innovative product development also continued with other brand partners including Bergans, Bestseller, ECCO, Icebreaker and Marimekko.

2021 took us huge steps closer to our mission of producing the most sustainable textile materials in the world for the benefit of the environment and humanity. We are now a listed company, building our first commercial factory and commercialising our products.

## WHAT ARE SPINNOVA'S MAIN COMPETITIVE ADVANTAGES?

– Spinnova is not just an incremental improvement to existing fibres, but a versatile technology platform. We produce the most natural man-made textile fibre out of many feedstocks, without harmful or complex chemical processes, with the touch and feel of natural fibres such as cotton and linen.

Using SPINNOVA® materials will hence play an important role in brands reaching their sustainability targets. Scalability is key here. We are now one of the few sustainable textile fibre innovations that have started industrial scaling and have a clear roadmap towards big volumes. Also, having the world's largest market pulp producer Suzano as our partner offers us both an ample, sustainable raw material supply and a clear industrial scaling path together.

What also sets us apart is climate friendliness, and net zero CO<sub>2</sub> targets are the most significant overarching industry megatrend. Brands with ambitious climate targets are in a hurry to cut their CO<sub>2</sub> emissions by e.g. 2030, and renewing their material base is a major vehicle in that. Our fibre emits 64.5% less CO<sub>2</sub> than cotton in the cradle-to-gate value chain. This is a big competitive advantage for us.

## WHAT'S HAPPENING IN THE RETAIL MARKET?

– As people globally become more and more aware of climate change and want to contribute to mitigating it with personal choices, the demand and willingness to pay

a premium for sustainable items is growing. Brands are answering the call of the market, and we have for example started to see CO<sub>2</sub> savings communicated on a product level. Consumers also want high transparency of product value chains from brands, which we can fully support.

Our brand vision is to be THE sustainable textile ingredient brand; one that retail brands will be proud to use in their products and that is a sign to the consumer of a truly climate friendly choice.

## WHAT ARE YOUR EXPECTATIONS FOR 2022?

– We are looking forward to the completion of our new Woodspin factory that will start operations late 2022, and results of the leather waste fibre development with Respin. Everything related to the scaling went to plan in 2021, and I'm confident in us delivering against our strategy again this year. We also look forward to continuing our product development collaboration with brands and expect to share more commercial SPINNOVA® products in 2022. Thanks to the initial public offering financing in June, we now have the capital to execute our growth plan.

**I would like to extend my thanks to our incredibly committed and skilled team, our partners, investors, and everyone who believes in our mission and has wanted to join our journey. This is just the beginning!**



**Janne Poranen**  
CEO, Co-Founder  
Spinnova

# Business

# 01 Market opportunity

Spinnova provides a much-needed solution for the very large and growing, nearly EUR 200 billion textile fibre market. Sustainable materials, such as SPINNOVA® fibre, are in particularly high demand in the fashion and apparel industry.

## INTRODUCING SPINNOVA'S MARKET: GROWING TEXTILE INDUSTRY

The global textile market is growing rapidly, thus increasing the demand for fibre. The value of the market is currently estimated at approximately EUR 200 billion and is expected to grow to approximately EUR 244 billion by 2030. Global fibre consumption is expected to grow to 150–155 megatonnes by 2030.

Spinnova is first focusing on the apparel industry because of our fibre's natural, cotton-like qualities and the apparel industry's high demand for sustainable materials. Today, the fashion and apparel sector represents approximately 75–85% of the global fibre market. The recent increase in apparel consumption is driven by several factors, most importantly the growing middle class contributing to higher consumption, shorter fashion trends, and fewer usage times of apparel before disposal. These factors were clearly visible during 2021. In addition to advancing apparel reuse and recycling, switching to sustainable fibres and materials is part of the solution.

According to current estimates, the forecasted supply of natural feeling fibres, such as cotton and cellulosic fibres, will not be able to meet the growing demand. In addition, synthetic fossil-based fibres lack certain properties, which makes them inadequate substitutes for natural fibres. They are also heavily criticised for their negative environmental impacts.

We believe that the SPINNOVA® fibre will play an important role in the textile industry's efforts to meet the demand for natural feeling fibres, and also in replacing environmentally harmful, synthetic fibres. We estimate that the shortage of current natural fibres will equate to a roughly EUR 45–60 billion business opportunity by 2030.

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THE NATURAL-BASED FIBRE SHORTAGE IS EXPECTED TO BE APPROXIMATELY EUR 45–60 BILLION BUSINESS OPPORTUNITY BY 2030.

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## ENVIRONMENTAL CHALLENGES OF THE FASHION AND APPAREL INDUSTRY

Our technology was created to help solve major sustainability challenges in the global textile industry, such as climate change and the transition to a circular economy. Our focus is on solving these issues, as the fashion and apparel industry is at a turning point: 4% of global greenhouse gas emissions are attributed to this industry. At the same time, the industry is increasingly recognising the limits of a linear economy where garments are made and disposed without reuse, repair, or recycling.

According to the European Commission, synthetic textiles are also one of the most significant sources of microplastics. In addition, many materials currently used in fabric and apparel production require water and chemical-intensive processes.

Major fashion and apparel brands have made commitments to significantly reduce their environmental footprint. Hence, leading brands have ambitious sustainability programmes that often include a change in their material foundation. To achieve this goal, brands are increasingly working with new material innovators, such as

Spinnova. Being an early adopter of new, more sustainable materials is likely to be a competitive advantage for brands, as consumers demand more environmentally friendly options.

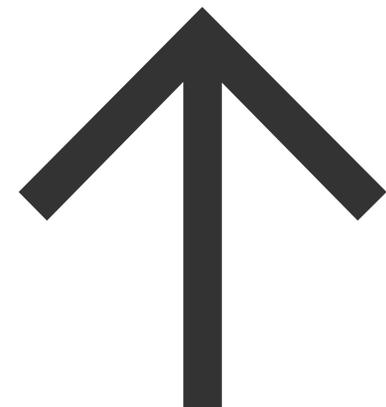
Our brand partners recognise the opportunities emission reductions and a shift to a circular economy brings. For example, the H&M Group has committed to being climate positive by 2040, with circular business models being the way to get there. Similarly, adidas has committed to being climate neutral by 2050, and has rolled out their Made To Be Remade initiative. Spinnova is committed to being the textile ingredient partner to support H&M, adidas and every other brand partner in reaching and exceeding their goals.

We believe that Spinnova has an excellent market position, as both end-customers and apparel companies favour sustainable solutions that meet capacity requirements. In addition to the apparel industry, various other industries are also on the lookout to replace their existing materials with sustainable, renewable alternatives to minimize CO<sub>2</sub> emissions as well as chemical and water use. Spinnova is testing and entering into partnerships in interior textiles, transportation textiles, and selected non-woven and composite areas.

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WE EXPECT SPINNOVA'S MARKET OUTLOOK TO REMAIN FAVOURABLE, AS THE DEMAND FOR SUSTAINABLE FIBRE AND MATERIALS IS GROWING.

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# Megatrends

## RISING CONSUMER ECO-AWARENESS

One of the most important consumer trends is the significant increase in environmental awareness: sustainability is becoming a key factor in consumption decisions. Consumers demand more transparency and sustainability from the products and brands they choose. They are after more sustainable alternatives to water and chemical intensive cotton, polyester, and viscose, and are increasingly willing to pay for them.

## CLIMATE CHANGE

Mitigating climate change means that humankind needs to find new ways to produce and consume. The textile industry has an important role in driving the shift to a carbon-neutral world. This goal is also prioritised by numerous legislative initiatives, such as the EU Green Deal, as the political pressure to respond to climate-related challenges increases.

Following the Paris climate conference and the Paris Agreement in 2015, the UN network “Fashion for Global Climate Action” was started. The purpose of the network is to align the apparel industry with the goals and objectives of the Paris Agreement and drive it towards net zero emissions by 2050.

With significantly lower greenhouse gas emissions compared to, for example, cotton, Spinnova’s technology is part of the solution to climate-related concerns in the apparel industry. For more information, see [\*\*pages 23-24\*\*](#).

## CIRCULAR ECONOMY

Climate change also puts new pressure on textile recycling. For example, the European Commission introduced a circular economy action plan in 2020, which promotes textile repair, reuse, and recycling.

The Commission has also introduced a directive banning certain single-use plastic products where sustainable alternatives are easily available and affordable.

SPINNOVA® fibre is fully recyclable and its quality is improved in recycling. In addition, our fibre can be made of cellulosic textile waste in the future, as the infrastructure for collecting and sorting this waste develops. With these attributes, SPINNOVA® fibre can significantly contribute to the EU’s circular economy goals.

# 02 Strategy and operations

Spinnova has a unique technology platform to produce a natural man-made fibre that is made from wood pulp using only mechanical processes, without dissolving or using harmful chemicals.

## TECHNOLOGY PLATFORM

Spinnova's production technology replicates the way a spider makes its web. The technology has been proven viable for commercial production through proof-of-concept studies at our 100-tonne pilot production facility in Jyväskylä, Finland. Since 2018, we have conducted joint development agreements with a variety of global apparel brands to bring our technology platform to the point of commercialisation.

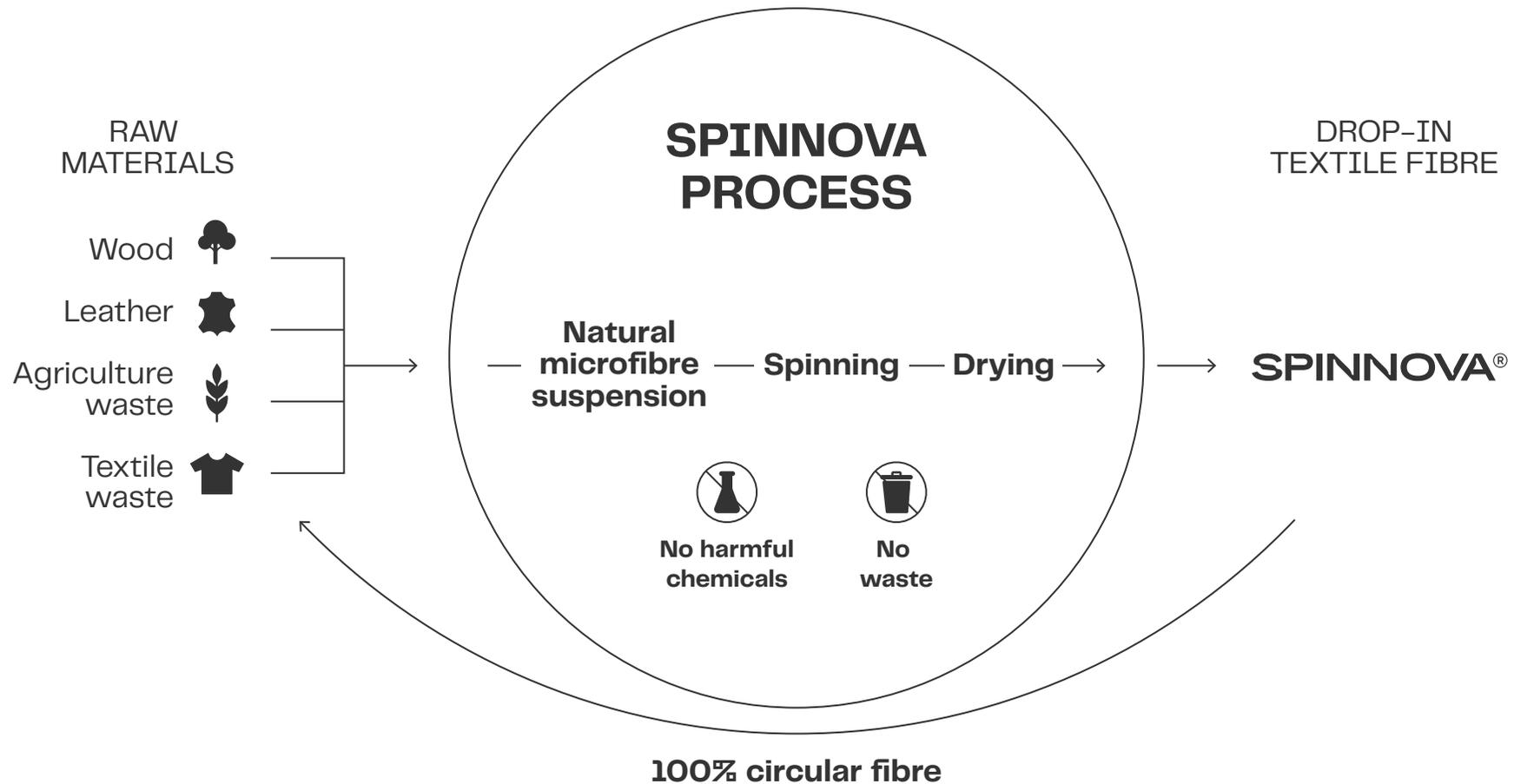
Our technology platform allows for the production of the natural, sustainable and recyclable SPINNOVA® fibre from multiple raw materials. These include wood pulp and the waste and side streams of several industries, such as agriculture, the food and beverage industry, and the apparel industry.

We use a micro-fibrillated raw material that is transformed into spinning-ready fibre suspension without any harmful chemicals. The suspension flows through unique nozzles at a high pressure, and the natural microfibrils are aligned with the flow to create an elastic filament structure.

The filament is then simply dried and collected, and evaporated water is reused in a closed loop. After collection and cutting, the fibres are ready for spinning into yarn. Dissolving or regeneration is not used at any stage of the fibre process.

Spinnova's technology platform and the SPINNOVA® brand are protected by strong international patents and trademark.

# Our technology and process model



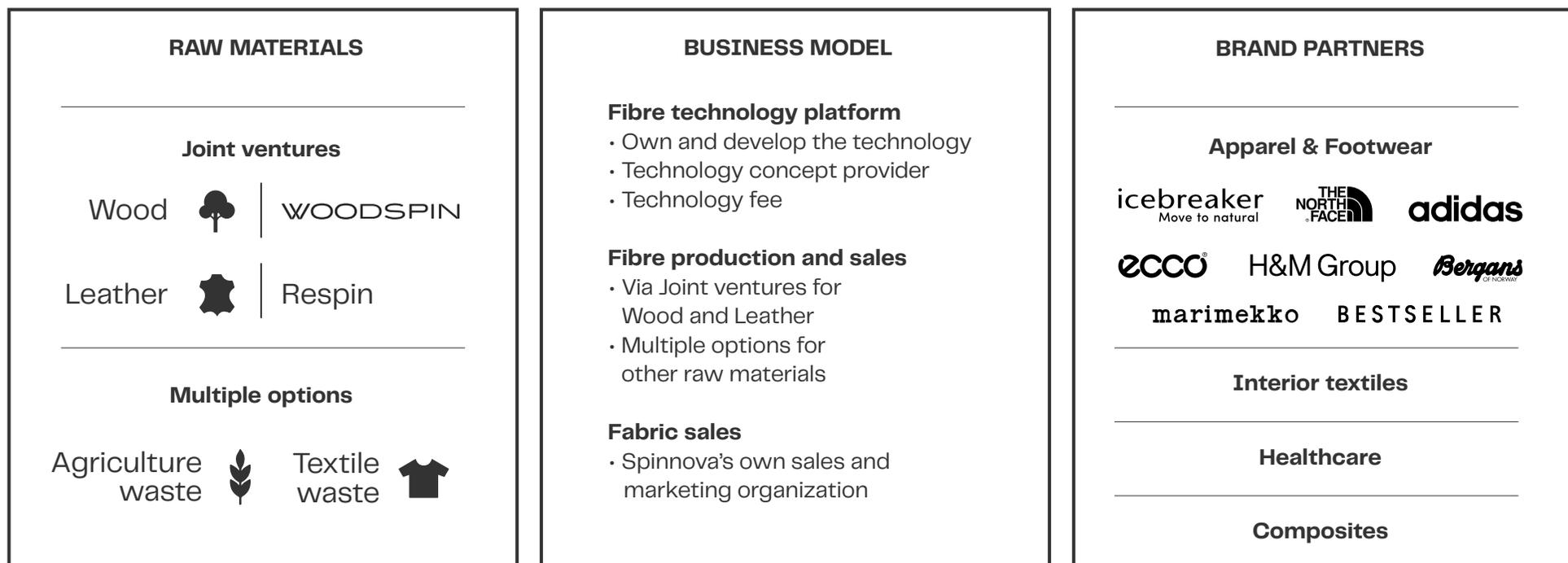
# Our business model

Spinnova's business model consists of three earnings streams. Firstly, we are the sole provider of our patented and scalable technology to partners to ensure the fast ramp-up of SPINNOVA® fibre production. Secondly, we produce SPINNOVA® fibre from wood pulp and leather waste through our joint ventures and sell it to apparel brands and other buyers. Thirdly, we work directly with

apparel brands as part of our go-to-market strategy and develop fabrics together with the brands to suit their needs.

In accordance with the business model, Spinnova has focused on operating through joint ventures and technological project deliveries. In 2021, Spinnova saw the first revenue from technological project deliveries.

## BUSINESS STRATEGY



# Our strategy

Spinnova's strategy execution advanced according to plan in all key areas in 2021. The listing of Spinnova on the Nasdaq Helsinki First North Growth Market secured the capital needed to advance our strategy.

In 2022, our main focus will be on delivering Woodspin, our first commercial-scale production plant, on time, piloting on leather waste-based fibre production with our joint venture Respin, and continuing our brand collaborations to introduce more commercial SPINNOVA® products. We now have the building blocks in place to execute our strategy; commercialize the SPINNOVA® fibre and scale our production.

Spinnova aims to be a global leader in the sustainable textile materials market. Our aim is to continue expanding our production capacity and investing in partnerships with apparel brands and textile manufacturers. Spinnova's mission is to produce the most sustainable textile fibres and materials in the world for the benefit of humanity and the environment. By doing so, we aim to transform the raw material base of the entire global textile industry for the better.

WE HAVE DIVIDED OUR STRATEGY INTO THREE AREAS:

- 1) technology strategy**
- 2) go-to-market strategy**
- 3) product and brand strategy**

## TECHNOLOGY STRATEGY

Spinnova's technology strategy consists of a technology roadmap, research and development, technology concept, and intellectual property protection.

Until 2021, we focused on developing the pilot production plant for SPINNOVA® fibre production. In 2021, we initiated the construction of the first commercial-scale production plant, Woodspin, Spinnova's joint venture with strategic partner Suzano, the world's largest pulp company. The factory complex will serve as a proof of concept for industrial scale production capacity. It will include Woodspin's fibre production, Suzano Finland's micro-fibrillated cellulose (MFC) refining, as well as Spinnova's headquarters and some of our product development functions. In 2021, the construction of the factory complex in Jyväskylä, Finland, advanced according to schedule and is set to be completed at the end of 2022.

Spinnova's scaling target is to reach an annual production capacity of more than 1 million tonnes of SPINNOVA® fibre in 10 to 12 years time (2031–2033).

In the medium term, we plan to scale up leather waste-based fibre production in our joint venture, Respin, with the shoe manufacturer ECCO's leather partner, KT Trading AG.

Spinnova finished building a pilot production line for its Respin joint venture in Jyväskylä in December 2021, setting the stage for commercialising Spinnova's leather waste fibre. The piloting, which focuses on producing leather fibre for R&D purposes and developing demo products with the material, is estimated to take one year. To Spinnova and KT Trading's knowledge, they are the only companies in the world able to convert leather waste into textile fibre without harmful chemicals.

Our technology can also produce SPINNOVA® fibre from other raw material sources, such as agricultural and textile waste. These areas will be further tested and developed before piloting, as the raw materials become available in larger volumes.

To strengthen our R&D capabilities, we decided on an EUR 2.2 million investment in an industrial-scale in-house yarn spinning facility 2021. The investment will streamline our commercial textile development, enhance brand collaborations, and further improve our market entry capabilities.

## GO-TO-MARKET STRATEGY

Spinnova's go-to-market strategy focuses on three elements:

- 1) technology sales,**
- 2) fibre production and sales, and**
- 3) fabric sales.**

The strategy encompasses selling Spinnova's technology platform exclusively to the joint venture companies in which it holds a 50% ownership stake. In the future, our strategy may also include selling our technology platform to other parties. Our joint venture companies, such as Woodspin and Respin, produce SPINNOVA® fibre using the technology platform acquired from Spinnova, and sell the SPINNOVA® fibre to textile brands.

Spinnova also aims to establish its own commercial-scale fabric production supply chain selling SPINNOVA® yarns and fabrics. The fibre used in the yarn and fabrics production would be purchased from the joint ventures producing SPINNOVA® fibre.

## PRODUCT AND BRAND STRATEGY

We are establishing partnerships with leading apparel brands to increase awareness of Spinnova's brand. This will help us differentiate our product to drive demand for SPINNOVA® fibre and fabric. Spinnova seeks to work with both premium and luxury brands and mass-market brands.

In 2021, we entered partnerships with adidas, the H&M Group, Icebreaker, and The North Face, who joined our existing brand partners Marimekko, BESTSELLER, Bergans of Norway and ECCO. All our partnerships are close, long-term relationships with the objective of using commercial volumes of SPINNOVA® fibre in brand material choices, thus supporting the brands in achieving their sustainability goals.

adidas was a cornerstone investor in the initial public offering of Spinnova, and through that commitment, its intention is to secure access to significant volumes of SPINNOVA® materials in the future. Spinnova's joint venture partner ECCO also took part in Spinnova's initial public offering.

With the H&M Group, Spinnova is engaged in long-term product development collaboration. The H&M Group's ambition is to become fully circular, and the partnership with Spinnova can address several of their sustainability challenges.

Our partnership with the outdoor apparel giant The North Face, announced in August 2021, aims to develop sustainable, high-performance textile materials for the outdoor apparel category. This collaboration could be a significant contributor to Spinnova's market entry.

The joint development agreement with Icebreaker focuses on material co-innovation. In 2021, we announced that Spinnova and Icebreaker are developing mid-layer products with next-generation blends of merino wool and SPINNOVA® fibre.

## SPINNOVA'S BUSINESS TARGETS WERE SET IN H1 2021

	PRODUCTION TARGETS	BUSINESS TARGETS	COMMERCIAL TARGETS
<b>MEDIUM TERM BUSINESS TARGETS WITHIN THE NEXT 4-6 YEARS (2025-2027)</b>	To reach 150,000 tonnes of SPINNOVA® fibre production capacity	To be EBIT positive	To enter into up to 20 commercial textile brand partnerships that use SPINNOVA® materials in their product lines
<b>LONG TERM BUSINESS TARGETS WITHIN THE NEXT 10-12 YEARS (2031-2033)</b>	To reach one million tonnes of SPINNOVA® fibre production capacity	To achieve a cumulatively greater than EUR 1 billion cash margin from technology sales  To achieve more than EUR 200 million EBIT per annum level consisting of the company's share of profits from joint ventures, recurring technology fees, and service maintenance fees	To enter into up to 80 commercial textile brand partnerships that use SPINNOVA® materials in their product lines

# Sustainability

# Sustainability at Spinnova

Sustainability is the very foundation of Spinnova's business. Our technology was created to solve major sustainability challenges in the global textile industry. By replacing materials that are water, CO<sub>2</sub>, and chemical-intensive, such as cotton, Spinnova also contributes to achieving several UN Sustainable Development Goals.

At the same time, we are determined to ensure that our own operations are as sustainable as possible. We are committed to protecting the environment and respecting human rights in everything we do. As an indicator of this commitment, we became Signatory of the UN Global Compact and its ten principles in 2021. We will continue to develop our sustainability processes, such as due diligence and responsible sourcing, to ensure that we understand and are able to address our impacts on people and the planet.



# 01 Governance and risk management



Sustainability is a key focus area of the Board of Directors (BoD) of Spinnova, which is the highest governance body of the company, and sustainability information, concerns, and trends are regularly shared with Board members. The CEO holds the ultimate responsibility for sustainability topics.

Strategic decisions regarding Spinnova's sustainability work and reporting are made in our Sustainability Steering Team which meets quarterly or, when needed to address critical topics, more frequently. The team consists of the entire management team, with the CEO as chairman, as well as representatives from other key functions, such as HR and Communications. The work and decision making of the Sustainability Steering Team is facilitated and coordinated by the Chief Sustainability Officer (CSO) who sits in the management team and reports directly to the CEO. The CSO is responsible for defining and managing Spinnova's sustainability strategy, building a responsible value chain, and overseeing the development of sustainable products from SPINNOVA® fibre. Everyday sustainability topics are coordinated by line management in production.

Spinnova's risk management process is guided by our risk management policy. For more information on this topic, see page 16 in our 2021 Corporate Governance Statement and on our website [www.spinnovagroup.com](http://www.spinnovagroup.com). We are in the process of integrating sustainability into our risk management processes.

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IN 2021, WE FOCUSED ON  
BUILDING OUR SUSTAINABILITY  
STRATEGY AND EDUCATING OUR  
EMPLOYEES ON THE IMPORTANCE  
OF SUSTAINABILITY.

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In 2021, we focused on building our sustainability strategy and educating our employees on the importance of sustainability to Spinnova's business. Going forward, we aim to strengthen the governance of operational sustainability topics.

# 02 Stakeholder engagement

Engaging with our stakeholders and understanding their viewpoints is highly valuable to us. We conducted a stakeholder analysis in 2021 to identify Spinnova's most significant stakeholders. The analysis was based on evaluating the level of interest stakeholders have in Spinnova and the type of impact they have on our business.

We frequently engage with our stakeholders to identify new trends within corporate sustainability and to understand the specific expectations they have for Spinnova's sustainability work and reporting. This includes, for example, close cooperation with our brand partners to continuously develop our business and regular discussions with our investors. We also strive to include employees in various sustainability processes, such as defining Spinnova's materiality. In addition, we interact with our stakeholders at various events and respond to inquiries in various channels, such as on social media.

WE HAVE IDENTIFIED THE FOLLOWING STAKEHOLDERS AS MOST SIGNIFICANT TO SPINNOVA:

CUSTOMERS	INVESTORS	SUPPLIERS	EMPLOYEES
CONVERTERS	CONSUMERS	REGULATORY INSTITUTIONS	MULTI-STAKEHOLDER INITIATIVES
ACADEMIA AND RESEARCH INSTITUTES	MEDIA AND INFLUENCERS	LOCAL COMMUNITIES	NON-GOVERNMENTAL ORGANISATIONS
PEERS	INDUSTRY ORGANISATIONS		

# Collaboration with international platforms

We are members of various industry and cross-industry collaborations that drive sustainability in global supply chains and in the textile industry. In 2021, Spinnova joined or continued to contribute to the following international platforms:

**UN Global Compact** is a voluntary initiative based on CEO commitments to implement its ten universally accepted sustainability principles. Spinnova became a Signatory of the UN Global Compact in 2021, which includes a commitment to report annually on progress towards the principles, in line with the compact's Communication on Progress policy.

**The Climate Leadership Coalition (CLC)** is a non-profit climate business network that drives positive climate impact through business solutions. CLC shares best practices, policy approaches, and strategies among its members who strive to be leaders in climate change mitigation. Spinnova became a member of CLC in 2021.

**Canopy** is a global network of companies that aims to protect and conserve the world's ancient and endangered forests. The platform seeks to introduce innovative and disruptive solutions that help eliminate the use of wood from vulnerable forests in companies' supply chains. Read more about our work with Canopy on [page 35](#).

**Ellen MacArthur Foundation** is charity committed to advancing the transition to a circular economy by creating evidence-based research on its benefits to society and by connecting companies whose aim is to accelerate the transition. Spinnova joined the Ellen MacArthur Foundation community in 2021.

**Fashion for Good** brings together the fashion ecosystem to promote technologies and business models that have the greatest potential to transform the industry. Spinnova has been a member of Fashion for Good since 2019. In 2021, a dress made of SPINNOVA® fibre was included in the exhibition "GROW: the future of fashion" at the Fashion For Good Museum in Amsterdam, the Netherlands.

**Textile Exchange** is a global non-profit that aims to positively impact the climate through accelerating the use of preferred fibres across the textile industry. Spinnova became a member of Textile Exchange in 2021.

**ZDCH Roadmap to Zero** aims to reduce the use of harmful chemicals in manufacturing. The initiative brings together the entire value chain to decrease industry's chemical footprint. Spinnova joined ZDCH as a contributor in 2021.

**Finnish Textile and Fashion** is an employer's association for textile, clothing, and fashion companies in Finland that aims at strengthening the innovativeness and creativity of its member companies. Spinnova is a member of the Finnish Textile and Fashion and joined its Responsibility and Circular Economy influencer group in 2021.

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SPINNOVA SUPPORTS  
COLLABORATIONS THAT DRIVE  
SUSTAINABILITY GLOBALLY.

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# 03 Spinnova's sustainability priorities

We took our first steps in analysing Spinnova's materiality in 2021. During the year, we mapped current and upcoming sustainability trends and frameworks and collected internal and external stakeholder views.

These topics form the structure for Spinnova's 2021 sustainability reporting. In 2022, we will further prioritise the identified material topics. We will also begin to build our sustainability programme based on the prioritisation and define targets and KPIs for key topics. While we have collected detailed data on our operations from very early on, we plan to implement more regular and systematic reporting on our material topics to assess our performance. These tools will help us build a holistic sustainability strategy that will guide our sustainability work and reporting now and going forward.

Spinnova recognises that the UN Sustainable Development Goals (SDGs) are a key initiative in building a safe and fair future for people and ensuring the health of the planet. We have identified preliminary SDGs that are the most relevant to Spinnova, and where we can have the biggest impact. We will continue this work in 2022. Our aim is to connect the SDGs to our sustainability programme and metrics.

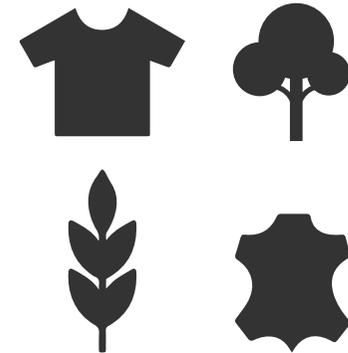
## **SPINNOVA'S MATERIAL TOPICS, INCLUDING ENVIRONMENTAL, SOCIAL AND GOVERNANCE TOPICS, ARE:**

- Sustainable innovations
- Climate and energy
- Circular economy
- Water use
- Chemical use
- Biodiversity and land use
- Occupational health and safety
- Employee wellbeing and development
- Local communities
- Responsible value chain
- Ethics and integrity
- Product safety and quality.

# Sustainable innovations

Our unique fibre and technology have the potential to significantly drive sustainability in the textile industry.

Spinnova's technology platform allows for the production of recyclable fibre from multiple raw materials, such as wood or leather processing waste, and other waste streams, such as agricultural and textile waste as well as waste from the food and beverage industry. Our innovations – and future ones – are where our positive impact on people and the environment is the biggest. Read more about our fibre and technology on [pages 10-11](#).



# Climate and energy

Climate action cannot wait. Spinnova is committed to contributing to climate change mitigation through its innovations, while also ensuring that its own operations are as low-carbon and energy efficient as possible.

The fashion and apparel industry accounts for 4% of global greenhouse gas emissions<sup>1</sup>. Spinnova's solution can drive significant change in reducing these emissions, as our fibre emits 64.5% less CO<sub>2</sub> than cotton<sup>2</sup>. In addition, our current main raw material, wood-based pulp, originates from eucalyptus trees that absorb more CO<sub>2</sub> as they grow than is released in harvesting, pulping, and the production of our fibre, combined.

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WE CALCULATED OUR CARBON FOOTPRINT IN 2021.

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## CARBON FOOTPRINT

No fuels or other materials are combusted in using our technology. The only greenhouse gas emitted is evaporated water which only stays in the atmosphere for approximately one week before returning to earth as rainfall. In 2021, our evaporated water emissions were 70 kg/m<sup>3</sup>. In our new joint venture, Woodspin, we will be able to create a closed loop for water by reusing the vast majority of evaporated water. In 2021, the only direct carbon dioxide (CO<sub>2</sub>) emissions from our operations (Scope 1) consisted of the fuel consumption of three leased company cars, of which one is a hybrid and one is an electric vehicle.

While we strive to only purchase renewable heat and electricity, some greenhouse gas emissions are released in their production, depending on the available energy mix locally. These emissions form our indirect Scope 2 emissions.

In 2021, we calculated the carbon footprint of our operations to determine the baseline for our future targets and key performance indicators (KPIs). The 2021 calculations, based on the [GHG Protocol](#) framework, included direct greenhouse gas emissions from our production (Scope 1) and indirect emissions

from purchased heat and electricity (Scope 2). These emissions totalled at 148.8 tonnes of CO<sub>2</sub> equivalents. We will continue collecting data for the remaining indirect emissions in our value chain (Scope 3) in 2022.

## GREENHOUSE GAS EMISSIONS FROM SPINNOVA'S OPERATIONS IN 2021 (CO<sub>2</sub>-e)

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SCOPE 1

5.8

TONNES

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SCOPE 2

143.0

TONNES

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<sup>1</sup> Source: McKinsey & Global Fashion Agenda, Fashion on Climate, August 2020.

<sup>2</sup> Simreka's environmental impact comparison (from plantation to fibre production), 2020.

## ENERGY EFFICIENCY

In 2021, our pilot production line and office spaces in Jyväskylä, Finland, used 79% fossil-free electricity, of which 52% was renewable and 27% was nuclear-based. The remaining 21% was fossil-based electricity. The heat used came from at least 90% renewable sources.

Our new joint venture, Woodspin, will boast a highly advanced and low-emission energy system, which will help us further reduce our energy consumption. The factory complex of Woodspin will run on 100% renewable wind-powered electricity and use recovered heat from our processes for heating. Between 50% and 80% of the heat energy from our processes will be recovered, while the rest will be transferred into the local district heating system.

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# 79%

FOSSIL-FREE ELECTRICITY

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We also want to encourage and help our employees to use electric or hybrid cars that run on renewable energy and have, for this purpose, installed multiple electric charging stations both at the pilot and Woodspin premises. To live up to our values and avoid the increased use of private vehicles, we also financially support our employees to purchase commuter bicycles.

## EMISSIONS TO AIR

Besides evaporated water, our operations do not release other emissions into the atmosphere. In 2021, there were zero emissions to air of carbon dioxide (CO<sub>2</sub>), ozone-depleting substances (ODS), nitrogen oxides (NO<sub>x</sub>), and sulphur oxides (SO<sub>x</sub>) from our operations.

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**THE ONLY GREENHOUSE GAS  
EMITTED WHEN USING OUR  
TECHNOLOGY IS EVAPORATED  
WATER.**

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# Circular economy

Spinnova advances the circular economy through eliminating waste and promoting the circulation of products and materials.

## ELIMINATING WASTE AND POLLUTION

Spinnova's technology creates no waste or side streams. We are able to reuse all cuttings, lower grade fibre, and other SPINNOVA® fibre residues in production. In addition, any raw material surplus generated when, for example, pulp becomes contaminated during transport, is turned into biogas by our local partner, Metener. The only potential waste created using our technology comes from the washing of containers and piping. As our feedstock is safe to even eat, the materials suspended in water are safe for people and the planet.

Some waste is also generated in our offices. The total amount of waste generated in our operations was 5 tonnes in 2021.

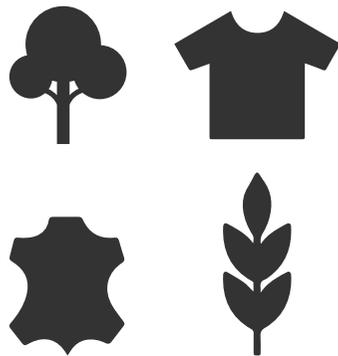
SPINNOVA® fibre itself is recyclable and biodegradable, which significantly reduces the likelihood of it ending up as waste.

## WASTE GENERATION, RECOVERY, AND DISPOSAL IN 2021

Waste composition	Tonnes
Energy waste	1.51
Mixed waste	1.29
Compost	0.70
Cardboard	0.54
Paper	0.58
Recyclable plastic	0.09
Hazardous waste	0.25
Other	0.04
<b>Total</b>	<b>5.00</b>

SPINNOVA'S TECHNOLOGY CREATES NO WASTE OR SIDE STREAMS.

	RECOVERY METHOD		DISPOSAL METHOD		
	Recycling	Other recovery method	Incineration (with energy recovery)	To landfills	Other disposal method
<b>Diverted from disposal (tonnes)</b>	2.56	2.54 100% non-hazardous waste	0.02 100% hazardous waste		
<b>Directed to disposal (tonnes)</b>	2.44		2.12 100% non-hazardous	0.10 100% non-hazardous	0.22 100% hazardous



## CIRCULATING PRODUCTS AND MATERIALS

Spinnova's technology can be used to work with a wide range of raw materials. Currently, our main raw material is **wood-based pulp**, but we actively investigate opportunities to use other materials as well, especially **agricultural side streams and waste**. In 2021, our joint venture, Respin, finished the construction of a pilot production line that will use side streams from ECCO's **leather** tanneries to make SPINNOVA® fibre. Read more about Respin on [pages 14](#) and [29](#).

When garments made with SPINNOVA® fibre can no longer be repaired, the fibre can be fully recycled using our technology. In addition, when the fibre is recycled in this

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OUR TECHNOLOGY ADVANCES  
THE CIRCULAR ECONOMY IN  
MANY WAYS.

---

way, it does not lose quality – in some cases, the quality of the fibre improves, making our solution **a method of upcycling** rather than recycling.

---

THE QUALITY OF SPINNOVA® FIBRE  
REMAINS OR EVEN IMPROVES  
WHEN RECYCLED.

---

We want to ensure that our fibre stays in circulation and does not end up in nature or waterways. We promote the recycling of Spinnova and all other fibres and strongly encourage our partners to integrate circularity – for example, repair, reuse, and recycling – into their business models. However, if SPINNOVA® fibre does end up in natural or marine environments, it biodegrades into safe components in 2–3 months, compared to, for example, plastic materials that take centuries to degrade and leave harmful substances behind.

# Water use



**Our raw material requires minimal water use, and our technology has a closed water loop in production. As a result, customers can significantly reduce their water footprint in the value chain.**

From farming to processing, SPINNOVA® fibre requires 99.5% less water compared to cotton textile production<sup>3</sup>. This is due to the heavy watering required by cotton plants, while eucalyptus trees, our main raw material, rely on rainfall for irrigation. Water is only used for irrigation in the nursery, where eucalyptus tree seedlings are grown to an appropriate stage, and when the seedlings are planted.

In production, we only use water for the pre-processing of pulp to make it into SPINNOVA® fibre. In 2021, we used 692 m<sup>3</sup> of water.

The condensed water in our new joint venture, Woodspin, will be continuously reused in a closed loop. We will even be able to capture and reuse the majority of evaporated water, which most other plants release into the atmosphere. Minimal amounts of evaporated water may be released into the air during production line ramp-ups. No water or other substances are discharged into the natural environment from Spinnova's operations.

Wastewater that is created at our facilities due to cleaning is treated appropriately in the municipal wastewater system. As SPINNOVA® fibre is wood based, it is completely free of microplastics. This means that SPINNOVA® fibre does not emit microplastics into wastewater or watersheds in our own or our customers' operations, or when washed by consumers.

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**WOODSPIN WILL BOAST A CLOSED LOOP FOR WATER USE – EVEN FOR EVAPORATED WATER.**

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<sup>3</sup> Simreka's environmental impact comparison 2020.

# Chemical use



As the pulp for our fibre is refined mechanically, it does not need to be dissolved using harmful chemicals. The refined cellulose is then transformed into spinning-ready fibre suspension, again without harmful chemistry.

The main additives that go into SPINNOVA® fibre are polymers, such as carboxymethyl cellulose (CMC) which is widely used in papermaking and food processing and is safe for people to use and digest.

We comply with the EU's REACH regulation for chemical use and follow the Finnish Textile & Fashion's Restricted Substances List that is regularly updated based on national and EU-level regulation. We also work closely with our suppliers to find the most sustainable and safe additives to be used in our fibre.

Our joint venture, Respin, is piloting with leather waste fibre. When processing the material, we ensure that the material that is used to make SPINNOVA® fibre is not harmful and complies with the REACH regulation.

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**SPINNOVA® FIBRE DOES NOT NEED TO BE DISSOLVED USING HARMFUL CHEMICALS.**

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As we develop our fabric production, we work with various partners in certain parts of the process, such as dyeing. All these processes are aligned with or go beyond the requirements of the EU's REACH regulation for chemical use. For example, we have chosen not to use any carbon fluorides in the finishing of our fabrics even though their use is allowed, although restricted, by REACH. This is because carbon fluorides accumulate in nature and do not biodegrade quickly.

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**ALL RAW MATERIALS THAT ARE USED TO MAKE OUR FIBRE ARE FREE OF HARMFUL CHEMICALS.**

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Some chemicals are also present in the cleaning products and other such items that we use at our units. All chemicals that are used by Spinnova employees or contractor employees come with appropriate instructions for safe use.

# Biodiversity and land use



We make every effort to ensure that biodiversity is safeguarded in our value chain.

Spinnova's operations have no direct impacts on biodiversity, and our raw material, eucalyptus-based wood pulp, originates from sustainably managed tree plantations, currently from the state of Espírito Santo in South-eastern Brazil. The plantations are located on land that was previously damaged due to other uses, such as cattle grazing, which means that no natural landscapes were destroyed to establish the plantations. The plantations are operated under a strict zero deforestation policy, and they co-exist with areas designated for conservation. This mosaic system supports the reduced use of natural resources, such as water and nutrients, and enhances soil productivity, stability, and resilience against erosion.

In Brazil, forest-based companies are required by law to set aside part of their land for conservation. Our raw material supplier, the Brazilian company Suzano, has set aside approximately 1 million hectares of vegetation, which corresponds to 40% of its total area. Suzano has also conducted active habitat restoration in areas totalling at over 35,000 hectares, and the company adheres to the requirements of the FSC and CERFLOR/PEFC certification systems. Read more about Suzano's sustainability work on [ir.suzano.com.br](http://ir.suzano.com.br).

Our joint venture, Respin, finished the construction of a pilot production line for leather fibre in Jyväskylä, Finland, in 2021. While the facility's operations have no direct impact on biodiversity, and the fibre originates from the side streams of leather production, the leather industry would not exist without cattle. The potential biodiversity impacts of the industry are typically linked

to the risk of deforestation due to land use changes that turn natural landscapes into agricultural land and areas for cattle grazing. It is therefore crucial that any leather that is produced stays in use and circulation for as long as possible, and Respin provides a solution to this through upcycling waste into new textile fibres. The leather waste comes to Respin from the side streams of our partner ECCO's leather tanneries in the Netherlands.

Read more about how we work with our suppliers on [page 35](#).

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OUR WOOD PULP COMES  
FROM SUSTAINABLY MANAGED  
TREE PLANTATIONS WHERE  
BIODIVERSITY IS SAFEGUARDED.

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# Occupational health and safety

Ensuring the health and safety of our employees is a top priority for us. We also require our suppliers to provide a healthy and safe workplace for their employees.

Our Health and Safety Committee aims to make occupational safety more visible to our own employees and contractor employees that work on our premises. We also ensure that all workers receive appropriate safety training. The goal is to build a safety culture throughout Spinnova's operations.

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IN 2021, WE ENHANCED THE REPORTING OF SAFETY INCIDENTS AND NEAR-MISSES.

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THE HEALTH AND SAFETY OF OUR EMPLOYEES IS A TOP PRIORITY FOR US.

---

In 2021, we enhanced our system for reporting safety incidents, near-misses, and other safety observations. The system covers the cyber, physical, and mental aspects of safety. Our goal is to apply for ISO 45001 certification for occupational health and safety.

We also invested in raising awareness about the reporting system to ensure that our employees understand what and how to report. During the year, we recorded one safety incident and 35 near-misses. The safety incident occurred while commuting and did not take place on Spinnova's premises. The near-misses were mainly related to maintenance activities. To ensure similar situations are avoided in the future, we put improvement plans and timeframes in place and will follow up on them. Based on reports and feedback so far, we have been able to improve, for example, some of our instructions for safe behaviour.

We conduct a safety tour of different parts of our operations every six months, while a more comprehensive tour is done once per year. These tours look at, for example, locations with potential safety issues, appropriate emergency exits, and safety signs and equipment.

During the COVID-19 pandemic, we have strengthened our efforts to secure the health of our employees. We monitor and follow the recommendations and restrictions set by national, regional, and local authorities, and update our own instructions accordingly. Anyone with the slightest symptoms is instructed to stay home. Throughout 2021, Spinnova was able to maintain very good operational capabilities despite the pandemic.

# Employee wellbeing and development

At Spinnova, we take great pride in our company culture where we care for and listen to each other.

---

WE EMPLOYED

60%

MORE PEOPLE IN 2021 THAN IN 2020

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At the end of 2021, we employed 64 people in Finland – up 60% from 2020. As our business continues to grow, this culture of caring, collaboration, and inclusion is something we aim to maintain.

In 2021, we defined our values: Teamwork, Innovation, Sustainability, Trust, and Courage. The process was very inclusive, and every Spinnova employee was offered a possibility to participate in the process. In addition to online surveys for personnel, we arranged a value workshop where 50 employees participated.

**In 2022, we hope to learn more about the wellbeing of our employees and find ways to increase it.**

To do this, we have started regular wellbeing surveys that will be repeated on a quarterly basis. In the survey, the respondent evaluates, for example, work-related stress factors and resources, motivation, and wellbeing at work. The wellbeing survey will also be one of the key indicators measuring the performance of Spinnova's management team in 2022.

## DRIVING DIVERSITY, INCLUSION, AND WELLBEING

We aim to provide an inclusive environment where people feel safe to share their feedback and ideas. This is vital for any business but especially crucial for a growing company like Spinnova. We want to hear from everyone so that we can continuously develop and improve our ways of working.

We cherish diversity and promote the equal and respectful treatment of all employees in all areas of work regardless of the employee's ethnic background, gender, religious beliefs, sexual orientation, marital status or other similar characteristic. We do not tolerate any forms of harassment or discrimination, including sexual harassment, bullying, or any other unacceptable behaviour towards anyone. Read more about Spinnova's approach to ethics and integrity on [page 38](#).

In addition to extensive occupational health care services and medical insurance, we provide several wellbeing-related benefits to our employees, such as the ePassi app. The app can be used to pay for employee benefits, such as dental care, massage, exercise, and culture.

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WE DEFINED OUR COMPANY VALUES  
IN 2021:

Teamwork  
Innovation  
Sustainability  
Trust  
Courage

---

We also want to support the flexible combining of work and family life. Remote and hybrid work is one example of ensuring this. While Spinnova enabled remote working prior to COVID-19, the pandemic has made hybrid work a permanent practice. We consider this a benefit for the entire Spinnova community.

## TRAINING AND CAREER DEVELOPMENT

As a fast-growing company, we are continuously developing our processes, systems, and tools to meet the needs of our growing personnel. During 2022, we will implement a new Human Resources system and enhancing our in-house recruitment.

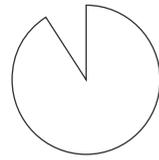
We cherish the sharing of ideas and honest feedback in daily discussions and meetings. In addition, all our personnel attend a formal development discussion twice a year. The discussions allow the employees and their managers to review their performance and discuss development opportunities and target setting in a structured way. Our employee bonus plan is based on performance on company-wide targets.

# Key personnel data

AS OF 31 DECEMBER 2021

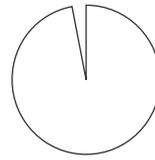
## EMPLOYEES

# 64



91%

Share of permanent employees



97%

Share of employees working full-time

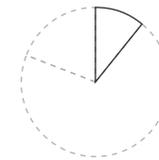
42

Average age, years

6.1%

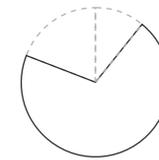
Employment turnover

## EMPLOYEE BREAKDOWN BY AGE



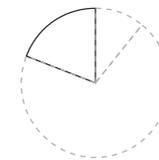
<30 years

11%



30-50 years

70%



>50 years

19%

## EMPLOYEE BREAKDOWN BY GENDER<sup>1</sup>

### ALL EMPLOYEES



### NEW HIRES



### BOARD OF DIRECTORS



<sup>1</sup> During the introduction of Spinnova's new human resources system in 2022, our personnel will be able to choose the option "Other / Prefer not to disclose".

# Local communities

Spinnova is building a unique industrial ecosystem in the town on Jyväskylä, Finland. We promote local sourcing and engage with the local community.

Jyväskylä hosts one of very few concentrations of paper and pulp technology. This provides a one-of-a-kind network for developing Spinnova's innovation in the form of expertise partners but also hiring new employees with skill sets that support our growth.

Through local sourcing, we strive to have a meaningful indirect employment impact in and around Jyväskylä. Whenever feasible, we source our materials and services from the local and near-by regions. This provides us with a wide local network, which give us a good understanding of who we work with and how they operate.

The local community around our operations in Jyväskylä is an important stakeholder group for us. We engage with local residents through, for example, guest lectures at schools, providing seasonal job opportunities for students, and responding to all inquiries. We also take great pride in not having a negative impact on the local environment.

While we donate funds to local charities, we have chosen to systematically prioritise climate-focused activities and organisations when making donations. In 2021, our annual donation was directed to WWF Finland's climate work. We have also donated computers taken out of use at Spinnova to local schools.

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THE LOCAL COMMUNITY AROUND  
OUR OPERATIONS IN JYVÄSKYLÄ  
IS AN IMPORTANT STAKEHOLDER  
GROUP FOR US.

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# Responsible value chain

One of the main building blocks of our business idea is building solid and inspiring partnerships throughout our value chain.

We seek to collaborate and co-create with organisations that are relevant to Spinnova's business and future growth, share our values, and strive to have a positive impact on people and the environment. This includes suppliers, customers, and research and development partners, such as academia. When choosing like-minded partners, we pay attention to the impact their business has as well as their level of commitment in sustainability.

## RESPONSIBLE RAW MATERIAL SOURCING

Currently, our main sourcing category is eucalyptus-based pulp which originates from FSC and/or PEFC-certified tree plantations in Brazil. The certifications provide third-party assurance of professional, sustainable plantation management. The eucalyptus used to make SPINNOVA® fibre is grown on plantations that were established on degraded land, not to replace natural ecosystems.

Spinnova and Canopy, the global network for responsible wood sourcing, co-created a Fibre Procurement Policy for Protecting Forests for Spinnova in 2021. Through this commitment, we acknowledge that Ancient and Endangered Forests must be protected and conserved and ensure that, to the best of our knowledge, we are not sourcing wood from controversial sources. Read our commitment in detail on [spinnova.com](https://spinnova.com).

We also source leather processing waste, or side streams from leather production, through our joint venture, Respin. Respin will pilot the manufacturing of SPINNOVA® fibre from this material. The leather waste is sourced from the leather tanneries of the shoe manufacturer ECCO which is our partner in Respin.

For information on the potential impacts these raw materials may have on biodiversity, see [page 29](#).

## ESTABLISHING SUSTAINABILITY CRITERIA FOR SUPPLIERS

During 2021, we worked with 25 suppliers. Most of our suppliers are located in the Nordics, Baltics, and Central and Southern Europe. As we build our supply chain, we focus on establishing sustainability criteria for suppliers and monitoring their performance. Our goal is that requirements for our suppliers are as strict as the ethical principles we have set for our own employees and management in Spinnova's Code of Conduct (read more on [page 38](#)). To help us do this, we began formulating our Supplier Code of Conduct in 2021 and will start implementing it during 2022. The Supplier Code of Conduct will include requirements related to human rights, the environment, and ethical business practices. It will be aligned with the principles of the UN Global Compact and the labour standards set out by the International Labour Organisation (ILO).

We are also strengthening our risk management process related to responsible sourcing. This will enable us to identify and address potential adverse impacts in our supply chains.

## COLLABORATING WITH PARTNERS AND CUSTOMERS

We aim to significantly scale up our technology on an industrial level to ensure that consumers increasingly have access to sustainable products made with SPINNOVA® fibre. We collaborate with some of the world's leading brands to do this.

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### WE SEEK TO COLLABORATE WITH ORGANISATIONS THAT SHARE OUR VALUES.

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Our mission to transform the textile industry is the main principle guiding us when choosing brand and other partners. We prioritise organisations that are committed to working with new innovations and Spinnova as a company, and who ambitiously and proactively drive sustainability in their value chain and the entire industry. In 2021, we were happy to announce several new partnerships that will help us on our mission. We realise that our success would not be possible without our partners, and that the change in the industry must be made together.

PARTNER VIEW

**marimekko**

## Could you describe Marimekko's sustainability strategy?

Since our company was established, Marimekko's design philosophy and operations have been founded on sustainable thinking, and we want to be at the forefront of the development of more sustainable products and practices, showing the entire industry the way towards a more sustainable future. Today, sustainability is a requirement for responsible business activities, but at Marimekko, we believe it also creates new value-adding opportunities for our business as we serve our growing global target audience. We think that in the future, timeless and durable products will be created in balance with the environment according to the principles of circular economy and fully transparently, starting from the raw materials.

Our long-term vision is that our operations will not leave a negative mark on the environment. Achieving this requires new innovations concerning technology, materials, and business models, which we are committed to promote continuously together with our partners. Our sustainability strategy, which encompasses both our own operations and our entire value chain, shows us the way towards our long-term vision and is based on three main principles: timeless design brings joy for generations, future products are eco-friendly, and fairness and equality lead us towards a positive change.

**Tiina Alahuhta-Kasko, CEO  
Marimekko**

[READ MORE ON OUR WEBSITE →](#)

Partner

# Ethics and integrity

Spinnova does not tolerate any unethical and illegal behaviour, and we always seek to go beyond compliance.

We comply with all relevant legislation and regulation set by authorities, such as those related to anti-corruption, competition law, employee health, labour rights, and parental leave. But we always seek to go beyond compliance and build an ethical company culture. While misconduct may weaken stakeholder trust in our brand and result in personal and business risks, we also believe that ethical business conduct is simply the right thing to do.

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OUR CODE OF CONDUCT  
DESCRIBES OUR PRACTICES AND  
COMMITMENTS REGARDING  
BUSINESS ETHICS.

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Spinnova's **Code of Conduct** describes our generally approved practices and commitments regarding business ethics. The Code of Conduct applies to all our employees and management, also in any duties or tasks they may hold in any joint venture or subsidiary of Spinnova. We require absolute compliance with the Code of Conduct. All our employees have the obligation to ask for help when necessary and to report suspected non-compliance to the relevant line manager, a member of Spinnova's management team, or our Whistleblowing Channel.

The Whistleblowing Channel was established in 2021, and it can be used anonymously by all employees of Spinnova. There were no reports filed through this channel during the year.

Reports filed through our Whistleblowing Channel are preliminary processed by an external service provider that discusses them with an appointed contact person, our General Counsel or Chief Financial Officer (CFO), to decide on the need for further investigation. The Board of Directors is also informed, as needed. All reports are processed confidentially. We do not tolerate any retaliation against people who report suspected misconduct in good faith.

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WE ESTABLISHED SPINNOVA'S  
WHISTLEBLOWING CHANNEL IN  
2021.

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If misconduct is found during the investigation, we take appropriate action to resolve the case and prevent similar situations from taking place in the future. This action can range from improving our processes to disciplinary or even legal action.

# Product safety and quality



Product safety is an essential part of Spinnova's innovation and product development. For us as a fibre producer, product safety is mainly linked to chemical safety. Harmful chemicals can cause environmental damage but handling them also presents health and safety risks for employees. Similarly, harmful chemicals in end-products, such as clothing, can cause skin irritation or pose other health issues for consumers.

Spinnova does not use any harmful chemicals in production, and none exist in our fibre. We also provide comprehensive instructions for the safe handling of the very few chemicals we do use. For more information on chemical use at Spinnova, see [page 28](#).

We also take great pride in our precise data collection and quality control systems. Information on every tangle of fibre is archived with detailed data on its origin and properties. As a part of the process, we conduct quality control tests to make sure that the fibre complies with our requirements.

## GRI CONTENT INDEX 2021

Spinnova's sustainability reporting for the financial year 2021 has been prepared with reference to the GRI 2021 Standards.

GRI Standard	Content indicator	Location and notes
<b>GRI 2 General Disclosures</b>		
2-1	Organizational details	Legal name: Spinnova Plc (public limited company) Location of headquarters: Palokärjentie 2-4, Jyväskylä, Finland Countries of operation: Finland
2-2	Entities included in the organization's sustainability reporting	The data included in this annual report covers the operations of Spinnova Plc. Our reporting on biodiversity and land use, as well as responsible sourcing also include Spinnova's 50%-owned joint ventures Respin and Woodspin due to stakeholder interest.
2-3	Reporting period, frequency and contact point	Reporting period for both financial and sustainability information: Jan 1, 2021 – Dec 31, 2021. Publication date: 04/2022. Frequency: annual. Contact point: CFO
2-4	Restatements of information	Restatements of information are not applicable for Spinnova's 2021 sustainability report, as this is the company's first such report.
2-6	Activities, value chain and other business relationships	AR2021: Strategy and operations
2-7	Employees	AR2021: Sustainability at Spinnova (Employee wellbeing and development)
2-9	Governance structure and composition	CG2021: Spinnova's governing bodies
2-10	Nomination and selection of the highest governance body	CG2021: Board of Directors, Board Committees
2-11	Chair of the highest governance body	CG2021: Board Committees
2-12	Role of the highest governance body in overseeing the management of impacts	AR2021: Sustainability at Spinnova (Governance and risk management)
2-13	Delegation of responsibility for managing impacts	AR2021: Sustainability at Spinnova (Governance and risk management)
2-14	Role of the highest governance body in sustainability reporting	The Board of Directors approves Spinnova's annual sustainability report.
2-16	Communication of critical concerns	AR2021: Sustainability at Spinnova (Governance and risk management)
2-17	Collective knowledge of highest governance body	AR2021: Sustainability at Spinnova (Governance and risk management)
2-19	Remuneration policies	CG2021: Board Committees
2-20	Process to determine remuneration	RR2021: Remuneration of the Board of Directors, Remuneration of the CEO
2-21	Annual total compensation ratio	RR2021: Business development of the Company and remuneration
2-22	Statement on sustainable development strategy	AR2021: CEO's review
2-26	Mechanisms for seeking advice and raising concerns	AR2021: Sustainability at Spinnova (Ethics & integrity)
2-27	Compliance with laws and regulations	AR2021: Sustainability at Spinnova (Ethics & integrity)
2-28	Membership associations	AR2021: Sustainability at Spinnova (Stakeholder engagement)
2-29	Approach to stakeholder engagement	AR2021: Sustainability at Spinnova (Stakeholder engagement)
2-30	Collective bargaining agreements	92% of Spinnova's employees were covered by Collective bargaining agreements in 2021.

GRI 3 Material Topics		
3-1	Process to determine material topics	AR2021: Sustainability at Spinnova (Spinnova's sustainability priorities )
3-2	List of material topics	AR2021: Sustainability at Spinnova (Spinnova's sustainability priorities )
GRI 201 Economic Performance		
201-1	Direct economic value generated and distributed	FS2021: Income statement
201-3	Defined benefit plan obligations and other retirement plans	Shares of salary contributed into retirement funds follow the national legislation of Finland.
201-4	Financial assistance received from government	Spinnova did not receive direct financial assistance from the government in 2021. However, we were issued a loan of EUR 2.066 million by Business Finland, of which we withdrew EUR 1.193 million during the year. Business Finland is a public organisation under the Finnish Ministry of Employment and the Economy.
GRI 205 Anti-corruption		
205-2	Communication and training about anti-corruption policies and procedures	AR2021: Sustainability at Spinnova (Ethics & integrity)
205-3	Confirmed incidents of corruption and actions taken	No cases in 2021.
GRI 206 Anti-competitive behaviour		
206-1	Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	No incidents in 2021.
GRI 207 Tax		
207-1	Approach to tax	Not applicable in this stage of the company's operations, as the company has not yet made a profit and does not have any non-Finnish subsidiaries or employees.
207-2	Tax governance, control, and risk management	Not applicable in this stage of the company's operations, as the company has not yet made a profit and does not have any non-Finnish subsidiaries or employees.
207-3	Stakeholder engagement and management of concerns related to tax	Not applicable in this stage of the company's operations, as the company has not yet made a profit and does not have any non-Finnish subsidiaries or employees.
GRI 303 Water and effluents		
303-1	Interactions with water as a shared resource	AR2021: Sustainability at Spinnova (Water use)
303-4	Water discharge	AR2021: Sustainability at Spinnova (Water use)
303-5	Water consumption	AR2021: Sustainability at Spinnova (Water use)
GRI 304 Biodiversity		
304-2	Significant impacts of activities, products and services on biodiversity	AR2021: Sustainability at Spinnova (Biodiversity and land use)
304-3	Habitats protected or restored	AR2021: Sustainability at Spinnova (Biodiversity and land use)

GRI 305 Emissions		
305-1	Direct (Scope 1) GHG emissions	AR2021: Sustainability at Spinnova (Climate and Energy)
305-2	Energy Indirect (Scope 2) GHG emissions	AR2021: Sustainability at Spinnova (Climate and Energy)
305-6	Emissions of ozone-depleting substances (ODS)	AR2021: Sustainability at Spinnova (Climate and Energy)
305-7	Nitrogen oxides (NOx), sulfur oxides (SOx), and other significant air emissions	AR2021: Sustainability at Spinnova (Climate and Energy)
GRI 306 Waste		
306-1	Waste generation and significant waste-related impacts	AR2021: Sustainability at Spinnova (Circular economy)
306-2	Management of significant waste-related impacts	AR2021: Sustainability at Spinnova (Circular economy)
306-3	Waste generated	AR2021: Sustainability at Spinnova (Circular economy)
306-4	Waste diverted from disposal	AR2021: Sustainability at Spinnova (Circular economy)
306-5	Waste directed to disposal	AR2021: Sustainability at Spinnova (Circular economy)
GRI 401 Employment		
401-1	New employee hires and employee turnover	AR2021: Sustainability at Spinnova (Employee wellbeing and development)
401-3	Parental leave	Spinnova pays full salary for a period of three months of maternity leave and six weekdays of paternity leave, which goes beyond the requirements of Finnish legislation on parental leave.
GRI 403 Occupational Health and Safety		
403-1	Occupational health and safety management system	AR2021: Sustainability at Spinnova (Occupational health and safety)
403-2	Hazard identification, risk assessment, and incident investigation	AR2021: Sustainability at Spinnova (Occupational health and safety)
403-3	Occupational health services	AR2021: Sustainability at Spinnova (Occupational health and safety)
403-4	Worker participation, consultation, and communication on occupational health and safety	AR2021: Sustainability at Spinnova (Occupational health and safety)
403-5	Worker training on occupational health and safety	AR2021: Sustainability at Spinnova (Occupational health and safety)
403-6	Promotion of worker health	AR2021: Sustainability at Spinnova (Occupational health and safety)
403-7	Prevention and mitigation of occupational health and safety impacts directly linked by business relationships	AR2021: Sustainability at Spinnova (Occupational health and safety)
403-8	Workers covered by an occupational health and safety management system	All persons working at Spinnova's production premises are covered by the company's occupational health and safety system.
403-9	Work-related injuries	AR2021: Sustainability at Spinnova (Occupational health and safety)

<b>GRI 405 Diversity and Equal Opportunity</b>		
405-1	Diversity of governance bodies and employees	AR2021: Sustainability at Spinnova (Employee wellbeing and development)
<b>GRI 406 Non-discrimination</b>		
406-1	Incidents of discrimination and corrective actions taken	No incidents in 2021
<b>GRI 415 Public Policy</b>		
415-1	Political contributions	No political contributions made in 2021.
<b>GRI 417 Marketing and Labeling</b>		
417-3	Incidents of non-compliance concerning marketing communications	No incidents in 2021.
<b>GRI 418 Customer Privacy</b>		
418-1	Substantiated complaints concerning breaches of customer privacy and losses of customer data	No complaints in 2021.

Spinnova  
as an  
investme**S**ment

# 01 Spinnova's IPO in brief

Spinnova's initial public offering and listing on the Nasdaq Helsinki First North Growth market marked a significant step in Spinnova's journey. In the offering, Spinnova raised gross proceeds of EUR 115 million.

The aim of our IPO was to support the implementation of Spinnova's growth strategy. The objective was also to finance investments to scale-up wood-based fibre production through our joint venture with Suzano and commercialise the fibre. The offering benefited Spinnova by strengthening the recognition of Spinnova and our SPINNOVA® brand among customers, potential new employees and investors and in the textile sector in general.

## KEY FACTS

- Subscription price was EUR 7.61 per share.
- In the oversubscribed offering, Spinnova issued a total of 15,111,695 new shares.
- Gross proceeds were approximately EUR 115 million.
- The offering attracted strong interest from international and Finnish investors – altogether approximately 22,000 investors joined Spinnova's journey. Our brand partners adidas and ECCO were among the investors in the IPO. At year-end 2021, the number of shareholders had increased to 30,648 shareholders, up by 53% since the IPO.
- Trading on Spinnova's shares (trading code SPINN) started on the Nasdaq Helsinki First North Growth Market on 24 June 2021.

“Thanks to the highly successful IPO, we can continue to execute our plans at full speed to reach our vision of transforming the raw material base of the global textile industry.”

Janne Poranen, CEO

# 02 Spinnova's strengths

## **SPINNOVA® FIBRE**

SPINNOVA® fibre is 100% recyclable, quickly biodegradable, contains no microplastics, and can be produced without dissolving or using harmful chemicals.

SPINNOVA® is the most natural man-made fibre, and its properties and comfort of use are comparable with natural textile fibres.

## **MARKET**

Spinnova is addressing the very large and growing, nearly EUR 200 billion textile fibre market.

## **TECHNOLOGY**

We have a unique and disruptive technology platform for producing sustainable textile fibres and materials from multiple feedstocks. The technology is highly scalable and modular with low project risk.

## **STRONG PARTNERS**

We have strong partners for ramping up the SPINNOVA® fibre production. Our scaling ambition together with Suzano is to reach more than 1 million tonnes p/a in the next 10-12 yrs.

Networking with industry leaders in e.g. machine manufacturing, automation, textile processing.

## **BUSINESS MODEL**

Spinnova is the sole provider of its patented and scalable technology to partners for fast ramp-up.

We engage in joint ventures with leading raw material providers to produce and sell SPINNOVA® fibre to apparel brands and other buyers.

We also work directly with apparel brands and develop fabrics together with such apparel brands to suit their needs.

## **PROFESSIONAL TEAM OF EXPERTS**

Spinnova has experienced management, personnel and Board of Directors with extensive technical, textile industry and commercial know-how.

Furthermore, we have an experienced R&D team with strong capabilities for scaling greenfield technology.

## **BRAND AND IPRS**

The well-known SPINNOVA® brand is strongly associated with sustainability. Our brand vision is to be a leading ingredient brand in sustainable textiles and other applicable materials.

Spinnova's technology platform, intellectual property rights, and the SPINNOVA® brand are protected by strong international patents and trademark.

**Please read more about Spinnova as an investment at [spinnovagroup.com](https://spinnovagroup.com).**

SPINNOVA IS DISRUPTIVELY SUSTAINABLE. CHOOSING SPINNOVA  
HELPS DRIVE CIRCULARITY AND MITIGATE CLIMATE CHANGE.  
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