

Kährs Group



ENVIRONMENT & SUSTAINABILITY EMAS 2019

The Conscience Report



This report is a translation of the controlled Swedish EMAS-report which covers Kährs Group Sweden and the operations in Nybro, Blomstermåla and Malmö




BEAUTY WITH A CONSCIENCE

When you choose a wood floor you also make a good environmental choice, both for your indoor environment and for our planet. Kährs Group, with its roots dating back to 1857, is one of the oldest manufacturers of wood flooring in the world. It is also one of the most innovative. Our inventions have radically changed the wood flooring industry globally – and have also contributed to sustainable development. By using wood, supporting the replanting of forests and showing consideration for the environment in every step of our processes, we do our best to further, continued sustainable development.

This report describes our environmental and sustainability work, what we achieved in 2019 and our goals for the future. We call it our Conscience Report. For the 24th consecutive year we are reporting in accordance with EMAS (the Eco-Management and Audit Scheme), the EU's voluntary environmental management tool. Our goal is not only to maintain but also strengthen our position in the development and production of sustainable wood flooring.

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About Kährs Group

Kährs Group is a Europe-leading manufacturer and distributor of premium flooring with strong brands in its product portfolio as Kährs and Upofloor. Kährs Group, which delivers products to more than 70 countries, is the market leader in wood flooring in Sweden, Finland and Russia and holds a strong position in other key markets, such as the UK, Norway and Germany. The Group has approximately 1,700 employees and annual sales of more than EUR 300 million. The President and CEO is Johan Magnusson. The owners are Triton & Hartwall Capital.

Read more at www.kahrsgroup.com

This report covers Kährs Group's Swedish units, organised within the subsidiary AB Gustaf Kähr and its operations in Nybro, Blomstermåla and Malmö, which produce about 5,2 million m² of wood flooring and employ 770 people.

About EMAS

EMAS is the EU's voluntary environmental management and environmental auditing regulation, Number 1221/2009. It aims to improve environmental work at companies and organisations and make it more efficient. EMAS conveys a credible message about the result of the environmental work through an assessed/audited and approved environmental report.



WORK ON VISION 2030 CONTINUES

In 2019, Kährs continued its extensive change work to become an even stronger partner for our customers. We have further strengthened our focus on sustainability issues and a special working group with representatives from different parts of the company ensures the integration of the sustainability work in all our operations. After careful evaluation, the sustainability work has been focused on six selected global goals within the UN Agenda 2030, where we believe that our activities have the greatest impact (p. 26). Each selected global target has been integrated into Kährs' vision for 2030 and we have also set internal targets and key figures to be able to monitor the progress.

The overall sustainability goal is something we call *Climate Positive and Beyond*. To get there, we need to reduce our net greenhouse gas emissions and implement other sustainability promotion measures that benefit people and the environment. For example, by converting to renewable energy, reducing waste from our production, developing our products with health and the environment in mind and ensuring that our raw materials are procured in a sustainable way.

To achieve climate positivity, we need to reduce the climate impact of the business, which can be achieved by reducing the consumption of fossil energy sources and products and converting it to renewable materials and energy sources to a greater extent. As part of this, a major change is underway towards more sustainable transport. The entire internal vehicle fleet indoors is already electric today and conversion is underway of vehicles used outdoors. When procuring transport to and from our facilities, we evaluate the suppliers' work to reduce their emissions from transport and require that there be action plans for the sustainability work.

For decades, Kährs has been producing carbon neutral biofuel in the form of wood powder and in 2019 we strengthened the sustainable offering by starting production of a more standardized product, wood pellets. In the pellet factory next to the flooring plant in Nybro, by-products from flooring production are collected and become biofuel. After extensive work, the production of wood pellets has received certification according to the Sustainable Biomass Program. Something that has demanded rigorous control of our raw material supply to verify that the wood for the pellets, and thus also for our floors, comes from sustainable forestry.

Wood raw material is central to our sustainability work as wood is a key resource in the business and has a major impact on sustainability aspects and the global goals that are particularly important for Kährs. We are proud to have increased the proportion of certified wood raw material to 78.4% in 2019 from 70.6% in 2018 for the entire Group. Two examples of other initiatives taken during the year are to subsidize replanting of oak trees to give forest owners incentives to replant deciduous trees and to assist with oak logs for the Kalmar County Administrative Board's project for the survival of endangered stag beetle. This is to promote a sustainable ecosystem and biodiversity.

We are also proud to have received a renewed license from the Nordic Swan Ecolabel, which means that more than 180 of our wood flooring products are now ecolabelled.

During the year, Kährs was one of the first suppliers to become an Authorized Flooring Company by the Swedish Floor Industry Association (GBR) after meeting all the environmental and sustainability requirements, which is a valuable confirmation of our long-term work in the area of sustainability, environment and quality. In 2020, we will continue to work to improve and adapt our operations in accordance with the global goals to reduce climate impact and to take further steps towards a Kährs which is *Climate Positive and Beyond!*

Johan Magnusson
President and CEO



Summary of the 2019 environmental year

In 2019 we continued to work to ensure that our operations are run more sustainably and more responsibly.

The Kährs Group's comprehensive approach to running businesses responsibly and sustainably and the expectations of stakeholders mean that we observe principles of social, economic and environmental consideration in our planning and operations.

Our production facilities are located in the heart of urban areas, close to residences and other municipal operations which make issues concerning noise, dust, surface runoff water and traffic very important. We conduct our own checks to monitor the environmental impact of our operations and changes over time.

Work on product certifications constantly places demands on the Kährs Group's operations, from product development and purchasing via production and HSE functions, to the marketing and communication departments. LCA data from a life cycle analysis carried out in partnership with Linköping University in 2017 was used for an upcoming Environmental Product Declaration (EPD).

The issue of climate change and the need to reduce our carbon dioxide emissions affect our activities – especially transport and energy consumption. One of the strengths of the wood flooring business is a very high proportion of renewable raw materials for

the production of flooring and as biofuel. Delivering our floors to over 70 countries leads to a high quantity of transportation, however, mainly by ship and truck. Dependence on fossil transport fuels is thus part of our climate impact that demands future action and research.

Our wood products store carbon over the decades that the flooring is used. Increased use of wood is good in terms of counteracting climate change because the material comes from a renewable source and is built from carbon dioxide, which is thus kept out of the atmosphere.

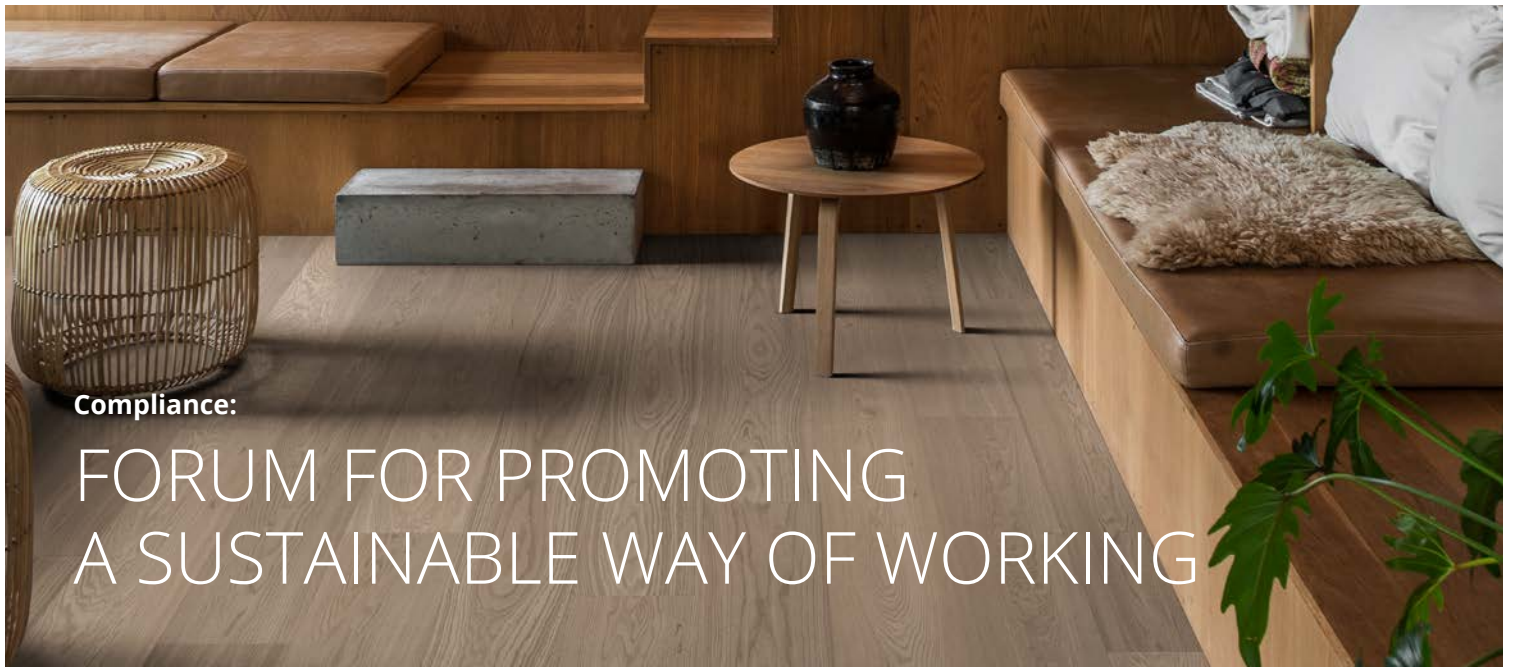
Sold wood flooring stored more carbon dioxide than we released during 2019.

POSITIVE RESULTS/MEASURES

- The Kährs Compliance Committee has continued its work to encourage progress in promoting the development of a sustainable approach.
- Almost 6 million square metres of manufactured wood flooring entailed the storage of over 88,000 tonnes of carbon dioxide.
- The new chemicals system, iChemistry, is now fully operational, thus making us well placed to continue to develop and improve our chemicals management.
- We have continued to support projects to benefit the protected stag beetle
- During the year a new plant for manufacturing wood pellets has been built adjoining the flooring factory in Nybro. The pellet facility will produce fuel pellets from by-products such as sawdust and wood materials that cannot be used in flooring manufacture.
- An efficient new surface layer dryer has been built and taken into operation.
- One of the sawmill's filters has been replaced.

FUTURE CHALLENGES

- Transport between Kährs Group units and external suppliers results in carbon emissions. Our challenge is to constantly improve logistics to reduce carbon emissions.
- Action plans to cut energy use and amounts of waste have not proven sufficient to attain the targets. Our challenge for the future is to step up work to become more energy-efficient.
- It has proved difficult to attain stable operation of the ozone plant, which is designed to reduce the amount of COD in process water from cleaning our machines. This means a delay to our work to reduce the amount of hazardous waste from the cleaning process.
- Greater interest in certification of products and operations from customers in many countries is increasing the demands made of our organisation.
- A new challenge will be to changeover from EMAS to another environmental reporting standard and to establish EPD:s that cover all our products.



Compliance:

FORUM FOR PROMOTING A SUSTAINABLE WAY OF WORKING

Our systematic work on compliance and development in all aspects of sustainability covers a wide area and has had its own forum – the Compliance Committee – since 2015. The Committee oversees our compliance with laws and regulations and sets targets for our work on ESG (Environmental, Social responsibility and Governance) issues. Members of Group Management and our environmental ambassador take part and the Board of Directors and owners can follow developments via key performance indicators and reports.

The Compliance Committee includes four representatives of Group Management and our environmental ambassador. The function of environmental ambassador, established in 2010, focuses on sustainability and compliance issues, mainly relating to environmental and social responsibility. The Company's Board of Directors and owners can follow developments via key performance indicators and reports and the results presented therein are reported regularly at Board meetings and periodically to our principal owner.

AREAS OF RESPONSIBILITY

The Committee is responsible for issues regarding non-financial compliance, including the Company's overarching programmes, policies and processes that ensure that operations are conducted in accordance with existing rules, as well as its exposure in terms of important legal or regulatory issues, Enterprise Risk Management (ERM), Business Continuity Planning (BCP) and Environmen-

tal, Social Responsibility and Governance (ESG). It is also responsible for ensuring that the Company fulfils its owners' demands on reporting Key Performance Indicators in accordance with the UN's requirements for responsible investment (UN PRI) and the owners yearly Transparency Report (www.triton-partners.com/responsibility).

The Committee oversees the Company's implementation of and compliance with applicable policies, such as the Company's Code of Conduct, its Code of Conduct for Suppliers and guidelines on anti-corruption and money laundering. It is also tasked with ensuring that all operations within the Group are conducted in accordance with relevant regulations, laws and product certifications. Work on risks at local level are described on page 30.

The Committee's duties also include dealing with complaints received via the employees' whistle-blower system.

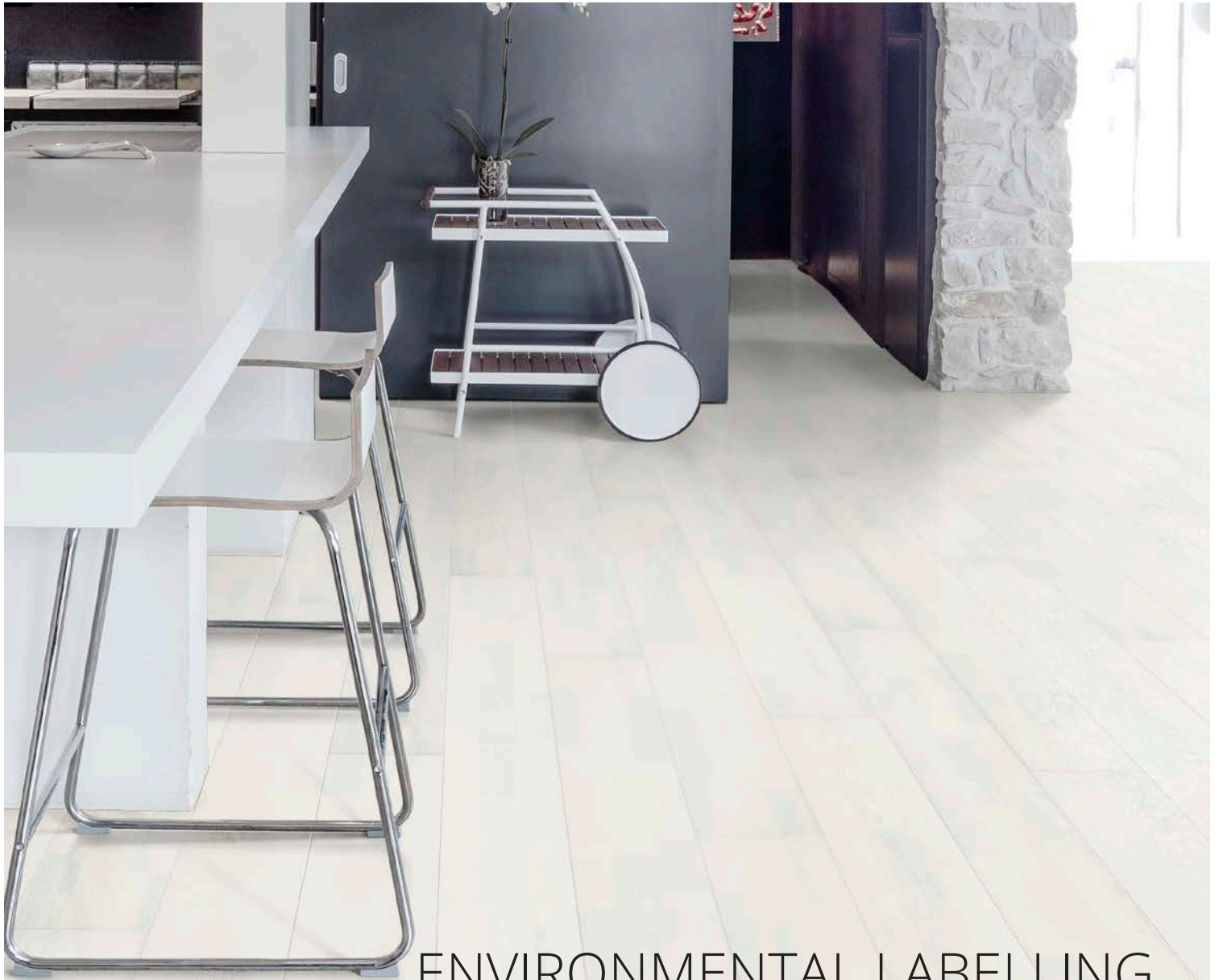


Kährs Group's Code of Conduct is intended to provide information about the Group's operating principles and offer tools to help make decisions that align with our ethical expectations and legal obligations. Within the area of our influence we strive to ensure that employees and business partners follow the principles of our code of conduct when working with us. Adhering to high ethical standards and doing the right thing are the driving forces behind Kährs Group's success and have been a core component of how we have done business since our beginning.

The requirements stated in this Code of Conduct are mainly based on internationally agreed standards such as the Universal Declaration of Human Rights, the principles in the UN Global Compact, the UN Convention on the Rights of the Child and applicable ILO Conventions."

General Principles from Kährs Group's Code of Conduct

Read more at <http://www.kahrgroup.com/en/responsibility/governance>

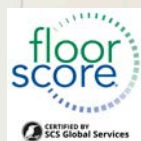


ENVIRONMENTAL LABELLING OF PRODUCTS

Product certifications and requirements applicable to many of our wood flooring products



BYGGVARUBEDÖMNINGEN™



BREEAM®



CLASS E1
FORMALDEHYDE-EMISSION
(EN 717-1:2004)

CARB 2
FORMALDEHYDE

Environmental Management System

Our operations affect the environment. To reduce our impact, we work on continuous improvement and follow-up and our management system helps us control the environmental work in a structured and efficient manner.

Kährs Group's environmental management work is now based on the same conditions and under a joint ISO 14001 certificate. From 2017, energy mapping and energy streamlining is covered by the environmental management system.

VITAL COMPONENTS OF THE ENVIRONMENTAL WORK

- Organization and distribution of responsibilities
- Identified environmental aspects and legal requirements
- Kährs' environmental policy, environmental targets & plans of action
- Routines for controlling the environmental effect of the activity/product and preparation for emergencies
- Internal and external environmental communication
- Training, education and participation
- Monitoring through internal audits and handling of deviations
- Auditing of the environmental management system
- Management reviews - Kährs Group's management meets two times a year to evaluate and improve the efficiency of the management system

THE DIFFERENCE BETWEEN ISO 14001 AND EMAS

EMAS is a complete environmental management system based on ISO 14001. EMAS includes requirements not normally included in an environmental management system. According to EMAS, our annual environmental report must be made public and published on the Swedish Environmental Protection Agency's website. Another difference is the requirement on employees' involvement, that we manage through our intranet, MBL – the Employment (Co-determination in the Workplace) Act – and departmental meetings.

Kährs Group's management system for quality and environment according to ISO 9001: 2015 and 14001: 2015 include:

Development, production, sales and marketing of floors.

Certificate Number*: SE007022-1 / SE007023-1

* In early 2020, Kährs Group switched to Bureau Veritas as certification body for its quality and environmental management system. This means that the certificate number was updated on 2020-02-26.

Group-wide quality and environment programme

Since 2020, one Group-wide quality and environment management system covers all operations. See page 34 for more information about the Group's production facilities outside Sweden.

A Group-wide management system was a logical development in creating a common platform in the Group for management of quality and environmental issues. This facilitates the process of attaining our goals and creating a consensus on what the Company is to achieve and how it should go about doing so. In the first half of 2018, the Group was upgraded and certified under standards ISO 9001:2015 and ISO 14001:2015.

In parallel with the implementation of the Group-wide management system, Kährs Group introduced a system for strategic analysis and risk assessment:

BUSINESS CONTEXT

As a means of support for planning of the business and developing strategies capable of translating goals into outcomes, Kährs Group analyses internal and external conditions via an annual SWOT analysis, at both local and global level.

STAKEHOLDERS' REQUIREMENTS AND EXPECTATIONS

One key factor in the success of an organisation is an active understanding and management of stakeholders' influence on the business. Various stakeholder categories are assessed in terms of

importance, needs and expectations, and of whether such expectations have been fulfilled or not.

RISK ASSESSMENT

Kährs operates a systematic process for assessing and consolidating the risks and opportunities of all its Group units based on its strategic analyses. The results, in the form of environment, safety, commercial and financial risks identified are then used as a basis for management's strategic planning.

QES

The Group's work on quality, environment and safety (QES) is coordinated via a global network involving several physical meetings to plan and coordinate this work among the units. Working towards goals, development and execution of action plans and internal audit are all part of operational activities. The group also discusses longer-term goals and visions in environment, quality and work environment, over a time horizon of five to ten years. In addition, the new WIA incident reporting system is playing a part in enabling the application of best practice within the Group.

Environmental Policy

Our stakeholders and Kährs share strong environmental and sustainable commitments, seeking long-term, circular business operations. We are committed to achieving this by acting responsibly with an innovative future-oriented approach. Furthermore, we will work toward our sustainable promise, "Climate positive and beyond", e.g. to reduce more greenhouse gas emissions than our value chain emits.

Our environmental policy is our guideline for the organization on how to operate.

CUSTOMER ORIENTATION

- We shall provide customers with beautiful, innovative, high-quality wood and resilient flooring, offering superior health and environmental qualities with positive attributes such as low emissions, durability and circularity
- Our design, development and manufacturing processes shall strive for a circular product lifecycle, with innovative choices to drive sustainable products
- We will comply to selected, voluntary and unique product certificates to prove conformity to global or regional market demands
- We shall seek to exceed environmental legislative requirements throughout the whole value chain from sub-suppliers to after installation activities

ENGAGEMENT AND COMMITMENT

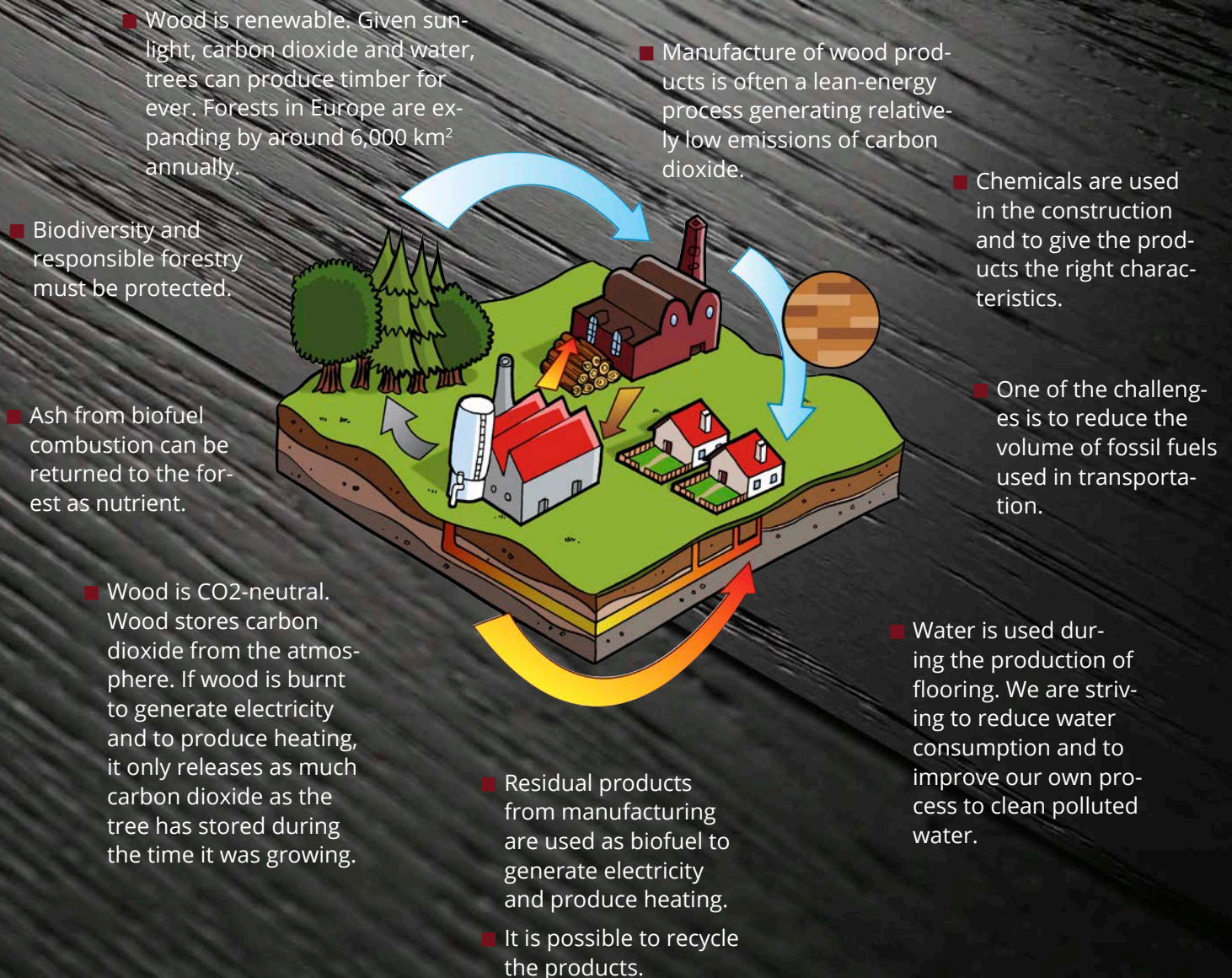
- Our commitment to environmental sustainability must be genuine, working with utmost sincerity, thought and respect
- As a purchaser and a producer of flooring and accessories, we shall always strive for a responsible supply chain, and as necessary, using third party auditor organizations
- On the way to becoming more circular, we will continue to innovate our value processes e.g. using more renewable or recycled raw materials, sourcing more of our energy needs from more renewable sources, and reducing our waste, energy, transports, carbon footprint, and water use
- We will offer greater transparency and communication of our environmental goals externally and internally, to enhance and motivate all supporting activities

SUSTAINABLE AND WELL-DEVELOPED PROCESSES

- We act accordingly as a Multi-site company with an ISO 14001:2015-certified environment management system, supported by FSC™ and PEFC® certifications on all wood flooring factories

WOOD FLOORING

in a circular economy



SUSTAINABLE FORESTRY

THE FOUNDATION OF OUR WOOD FLOORING OPERATIONS

66%

of all wood that is used in the production operations in Nybro and Blomstermåla come from Swedish forests, and less than 2 per cent are from countries outside the EU.

1000+

forest owners that Kährs Group's Swedish hardwood buyers have contact with yearly about purchase, education and advice.

77 000 tonnes

of stored carbon dioxide in flooring produced by AB Gustaf Kähr in 2019.

In all sold wood floors by Kährs Group 2019, the carbon dioxide storage was 140,000 tonnes.

91%

certified wood purchased for the Swedish operations.



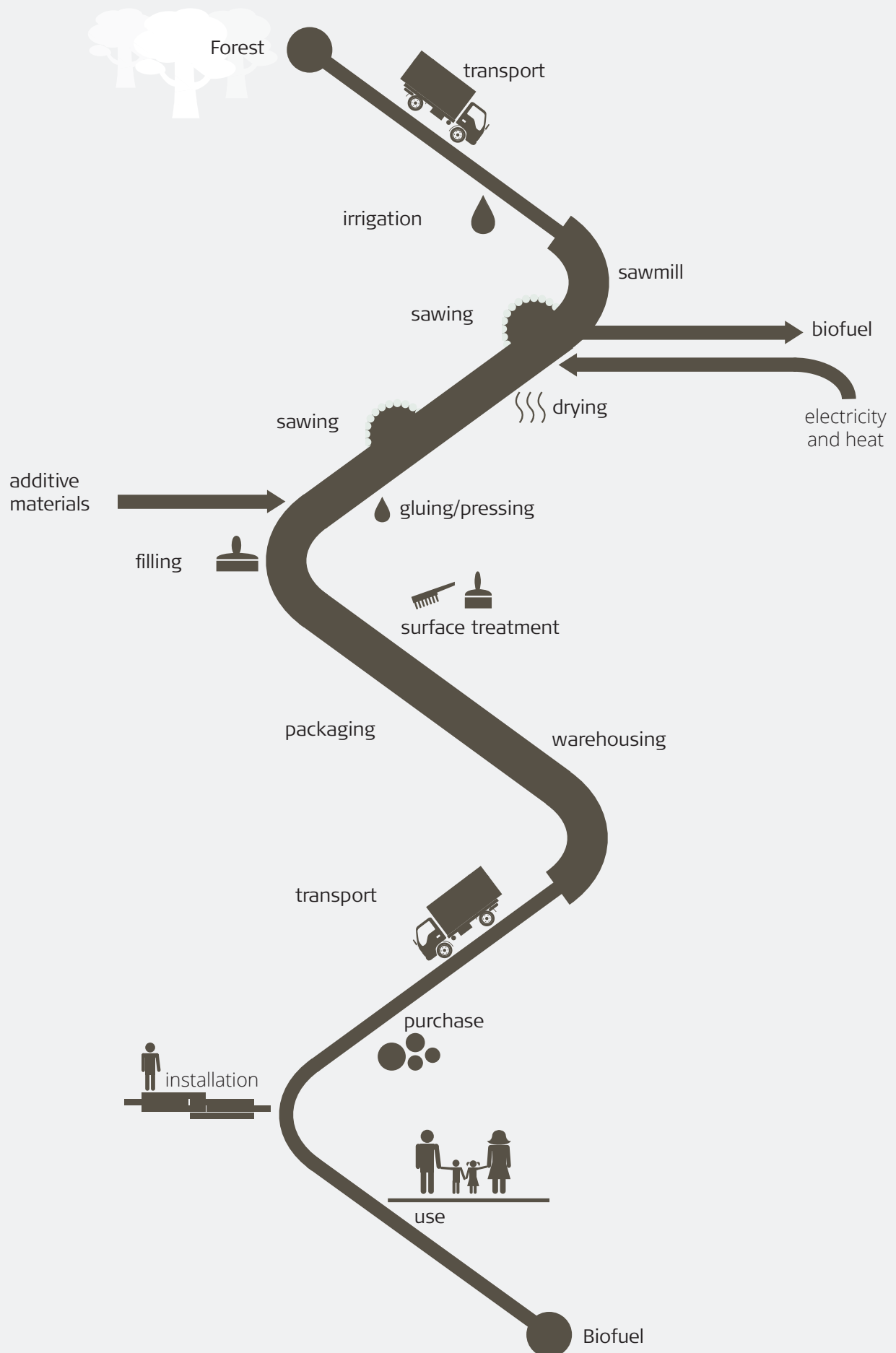
approx. 90%

of the floors we sell have a surface layer of oak. The Swedish oak tree is harvested and maintained according to the Swedish act on broad-leaved deciduous forest, Ädellövskogslagen (1984:119).

164 km

The oak logs bought directly from Swedish forest owners grow within an average radius of 164 kilometres of our sawmills in Nybro and Blomstermåla..

Our operations – wood flooring lifecycle





IMPACT ON THE ENVIRONMENT – ECOLOGICAL BALANCE

An organisation's activities, products and services affect or could affect the environment. This impact is described through environmental aspects. Some aspects will have no impact on the environment during normal operation and a few only in connection with operational disruptions or accidents.

SIGNIFICANT ENVIRONMENTAL ASPECTS




An activity that causes or may cause significant environmental impact is called a significant environmental aspect. To determine which of our environmental aspects are the most significant from an environmental perspective, we perform an annual evaluation, in which we take into account factors such as extent, environmental policy, legislative requirements, local/global environmental impact and risks of operational disruption or accidents.

The significant environmental aspects form the basis for the goals that we have set for reducing our impact on the environment.

ECOLOGICAL BALANCE

We report on the development of significant environmental aspects within Kährs Group's Swedish operations in what we call an Ecological Balance. This includes trends for outcomes of key environmental indicators and a description of negative and positive environmental impact for various environmental aspects. Results of work on our goals are also reported.

The trend for each significant environmental aspect is summarised with a colour code, where the colour indicates the development compared to the previous year.

-  = Positive development during the year
-  = The situation is stable
-  = Environmental impact is increasing, measures required

Responsible forestry – Biological diversity

Our largest impact on biological diversity is linked to the extraction of wood raw materials and purchases of wood raw materials, we have chosen to focus on this through sustainable forestry. One of Kährs' main environmental objectives is to increase the proportion of certified wood material in our floors.



Environmental Target: Certification

ONE OF KÄHRS' GOALS IS TO INCREASE THE PERCENTAGE OF CERTIFIED WOOD RAW MATERIAL

In 2019, our goal for certified wood raw material was 90 per cent, calculated as a percentage of the total volume purchased for the Kährs Group's Swedish operations; the outcome was 91 per cent.

The forest certifications Kährs Group uses are FSC®, FSC-Fairtrade, FSC Controlled Wood, PEFC and trusted certifications that we have deemed acceptable in conjunction with leading environmental organisations.

All wood purchases, according to our specifications, must comply with the requirements of the Lacey Act and the European Timber Regulation.

Our ambition is to purchase according to Kährs Group's standard for controlled wood, as our minimum acceptable level, which is a good way to provide support to responsible forestry. The amount of sold FSC certified flooring is driven by customer demand.

The percentage of FSC-certified oak logs available in Sweden is dependent on the percent-

age of woodland that is certified. Today the percentage is over 50 percent, but despite this the actual hardwood supply available is limited. All the local Swedish raw material is classified as "from low-risk area" by the FSC but due to costs considerations many of the small landowners choose not to become FSC certified.

We consider it important to continue working with certified material through collaborations with the various players and stakeholders in the industry.

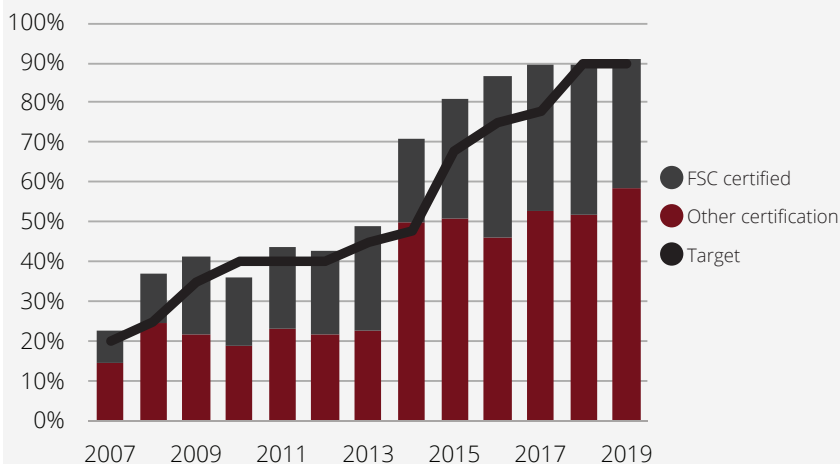
OUR RESPONSIBILITY

The wood floors we manufacture are 98 percent made of wood material, and as a considerable user of wood as a raw material, we have a responsibility to support and encourage the development of sustainable forestry. Through continuously increasing demand for certified wood, we contribute to placing a value on lasting, long-term forestry. It is our belief that a future, sustainable supply of controlled wood is of utmost importance not only for Kährs Group, but also as a global concern.

How FSC certification contributes to biodiversity has been studied by FSC and summarized in reports on Sweden's forests from 2013 and Latvia's forests from 2017 (<https://se.fsc.org/se-se>)



PROPORTION OF CERTIFIED WOOD RAW MATERIAL PURCHASED FOR KÄHRS GROUP IN NYBRO & BLOMSTERMÅLA.



Targets for 2020

The target for Kährs Group Sweden is 90%.

- Kährs Group's Russian operations were FSC certified in early 2019. This will give us traceability for more purchasing of wood products and thereby a higher proportion of certified wood within the Group.
- Work with new and existing suppliers of wood material to increase the proportion of certified materials.

For all wood purchasing in the Kährs Group the target is to attain 74% certified wood raw material in 2020. In 2019 we reached 78% for the Group as a whole.

SIGNIFICANT ENVIRONMENTAL ASPECT: USE OF RAW MATERIAL – PURCHASES OF WOOD RAW MATERIAL

ENVIRONMENTAL IMPACT	RISK	TREND
Purchasing of wood raw material. Can cause a deterioration in biological diversity & disruption in carbon sink.	Wood from felling operations that do not meet requirements for sustainable forestry being delivered to Kährs.	Positive development

Support for the rejuvenation of oak

"Deciduous trees have an economic value and are important for biodiversity," writes the Forest Agency in one of its brochures. New planting and replanting of broad-leaved deciduous forests is needed and therefore forest owners can receive subsidies for it.

The Swedish Forest Agency has drawn attention to and seeks to prevent a long-term lack of broadleaf woodland and poorer biodiversity. Therefore, it is possible to obtain government grants to rejuvenate broadleaf woodland. The grant covers 80% of the cost of planting new broadleaf trees.

KÄHRS PROVIDES EXTRA SUPPORT FOR THE PURCHASE OF PLANTS

Kährs has decided to provide additional support, in addition to the government grant, to the forest owners who have supplied logs to Kährs and who choose to rejuvenate by planting oak. Kährs will meet the remaining 20% of the cost of seedlings in order to provide an extra incentive to the forest owner.

An example of such replanting of oak can be found in Ödeshög in Östergötland, Sweden, where nine thousand oak plants were planted in the spring of 2019. Anders Nilsson, timber buyer (pictured), was involved in the work and in November he was back on the fields when Camellia Yordanova Nirell, from the Swedish Forest Agency, inspected the planting.



Photo: Daniel Nestor



Kährs wood pellets certified according to Sustainable Biomass Program

Since the beginning of 2019, Kährs has been producing wood pellets of by-products from the wood flooring production.

After decades of providing carbon neutral biofuel energy in the form of wood powder to the market, Kährs decided to invest in a more refined and standardized energy product - wood pellets, from its own, state of the art plant adjacent to the Nybro factory.

Kährs can now provide third party assurance that its pellets are produced according to the SBP standard to mitigate risks of illegal harvesting and unsustainable sources.

The SBP certification builds on established forest certifications such as Forest Stewardship Council® (FSC®) and the Programme for the Endorsement of Forest Certification™ (PEFC). Kährs management system was evaluated to ensure compliance with the requirements of the SBP standard including; review of the production processes; production site visits; review of PEFC systems and of the total supply base for wood.

Kährs carried out further risk mitigation activities, involving 450+ suppliers in more than 25 countries, to be compliant with the SBP framework. In late 2019 the final audit was made by the auditing body NEPCon and Kährs received its certificate January 2020.



ABOUT SBP

The Sustainable Biomass Program (SBP) is a non-profit standard setting organisation, which manages a voluntary certification system designed for woody biomass used in energy production. SBP enables certified companies to demonstrate that they produce, trade or use woody biomass from sustainably-managed forests. SBP certification is founded on principles of legality, sustainability and independent auditing and verification

There is no global definition of sustainability. Therefore, like all other sustainability certification systems, SBP has developed its own set of 38 sustainability indicators which address forest-specific objectives, including:

- Maintaining or increasing forests;
- Conserving biodiversity; and
- Preserving forests of high conservation value. Read more at: <https://sbp-cert.org/>

Water - Sources and usage

Water is part of a closed loop environmental system, so it is very important that the water we return to the environment is clean. The largest part of our water use goes to the irrigation of timber and to regulate the moisture content in the drying process.

USE

The irrigation of timber prevents the timber from drying too quickly and cracking before it is sawn. In Blomstermåla water is taken from the River Alsterån, while the process in Nybro is based on recirculation to reduce water use.

To prevent the drying of sawn wood from proceeding too quickly, the moisture level in the drying facility is regulated, which also requires water. Water is also used to cool and clean processing equipment.

EMISSIONS TO WATER

Surface runoff water/leachate from irrigation of timber and from biofuel stores has elevated levels of oxygen-demanding substances and tannins (a substance that arises from the decomposition of wood or oth-

er organic substances). A vegetation-based sediment filter (VSF) in Nybro reduces the amounts of organic matter to the recipient.

In Blomstermåla no recirculation of irrigation water takes place; instead it is filtered, mainly by ground soil, before it reaches the River Alsterån. Outgoing water is regularly tested to check for emissions of potential pollutants.

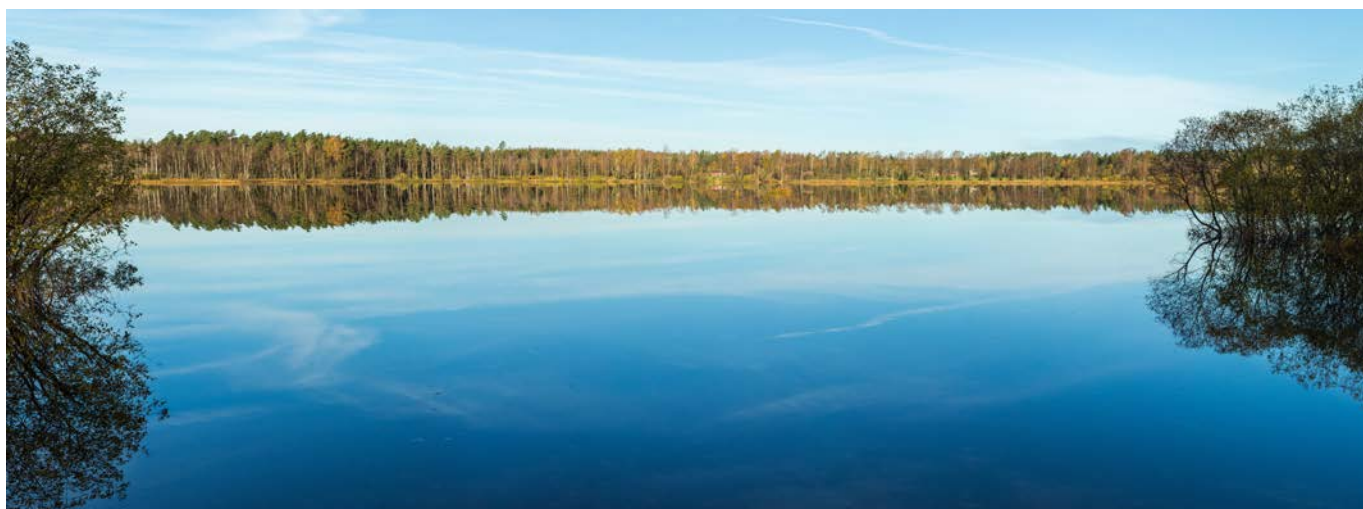
Cleaning of machinery and equipment produces process wastewater is generated in manufacturing operations. The polluted process wastewater contains organic substances (TOC) that are not easily degraded in the municipal treatment plant. Therefore, all process wastewater is treated in an internal sedimentation/adsorption process to reduce the amount of persistent organic substances before it is released into

the municipal wastewater network. Yearly, about 150 m³ treated process wastewater is released from the operations in Nybro.

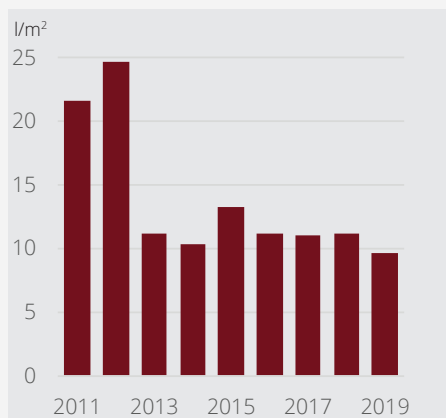
To reduce the amount of organic matter (TOC) in the process water to the municipal treatment plant there are two cleaning stages; sedimentation and ozone treatment.

The sedimentation stage has continuously been in use during the whole year.

The ozone equipment installed at the end of 2016 has not reached a sufficient operating status. We are now working to replace the ozone process where we intend to re-use as much of the cleaning water as possible. During the year we have detached the pH-process from the ozone process so that it is operational and adjusts the pH of released water.



WATER USE l/m²



WATER USE 2019	m ³	l/m ²
Municipal drinking water	21,782	3.7
Of which is for the drying process	12,003	2.0
Of which is cooling water	6,836	1.2
Groundwater for irrigation of logs	0	0.0
River water for irrigation of logs	35,937	6.1

Water – Source, use and treatment



Type of water	Treatment stage Kährs	Diverted to	TOC content before treatm.	TOC content after treatm.
Leachate from timber yard	VSF	Municipal storm water network (for surface runoff water)	50-300 mg/l	53 mg/l



Type of water	Treatment stage Kährs	Diverted to	TOC content before treatm.	TOC content after treatm.
Process wastewater from cleaning of gluing and hardening equipment	Sedimentation/ adsorption process	Municipal sewage network	ca 21,000 mg/l	3,500 mg/l

SIGNIFICANT ENVIRONMENTAL ASPECT: WATER USE & RELEASE OF PROCESS WASTEWATER

ENVIRONMENTAL IMPACT	RISK	TREND
Water pollution and the dispersal of organic material which is not degraded in a municipal wastewater treatment plant (WWTP).	Damage to treatment processes in a waste municipal wastewater treatment plant or recipient.	Stable development

Waste - Recycling

By reducing waste, material efficiency increases while resource consumption decrease. We strive to reduce the amount of waste that arise from our operations.

WASTE

Our operations mainly give rise to waste that is recycled for its materials (such as plastics, corrugated cardboard, metals and office paper) and energy extraction (such as sand paper, adhesive residue, plastic ribbons and filter bags from our filtering systems). What cannot be used for material recovery or energy extraction is sent to landfill. By-products such as wood chips and sawdust are included under "Energy

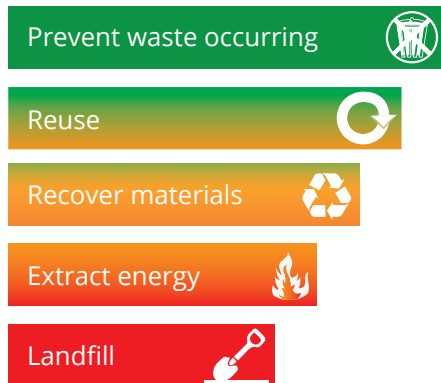
efficiency and biofuel production" on pages 28–29.

All waste is sorted according to Kährs' Waste Standard. The Waste Standard is based on the principles of the waste hierarchy, which is a prioritization guide for how we should treat our waste when we dispose of it.

We are working to move the waste as high up the waste hierarchy as possible and increase quality at each level.

The vast majority of waste that arises in AB Gustaf Kährs' operations goes for material recycling and energy extraction. Only a very small proportion goes to landfill.

The landfill material generated tends to be waste material from rebuilding projects. In 2018, however, the total amount of waste increased, mainly because the plant in Nybro replaced production equipment during the year, which increased the amount of metal sent for recycling.



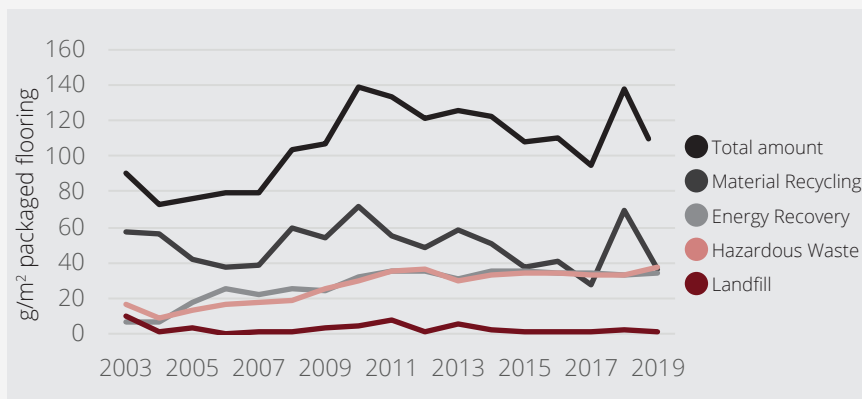
HAZARDOUS WASTE

Hazardous waste constitutes one of our significant environmental factors and largely arises in cleaning our equipment and in conjunction with retooling in our production processes.

Even though the waste is managed in an environmentally acceptable manner, it still interrupts the natural ecocycle. The handling of hazardous waste also always involves a risk that hazardous substances will harm the environment if they end up in the wrong place.

At Kährs, hazardous waste is collected in containers approved for the purpose, and is stored and handled in designated locations. Selected contractors then process the hazardous waste professionally and in an environmentally correct way.

AMOUNT OF WASTE PER M2 OF PRODUCED WOOD FLOORING. TOTALLY AND PER FRACTION



WASTE 2019	tonnes	g/m²
To material recycling	190	36
To energy recovery	178	34
Disposed as hazardous waste	192	37
To landfill	9	2

SIGNIFICANT ENVIRONMENTAL ASPECT: HAZARDOUS WASTE

ENVIRONMENTAL IMPACT	RISK	TREND
Waste production means inefficient use of materials. Hazardous waste violates the natural cycle.	The handling and storage of hazardous waste involves a risk of seepage into nearby soil and watercourses.	Stable development



Environmental targets – Waste

ONE OF THE ENVIRONMENTAL TARGETS FOR 2019 WAS TO REDUCE THE AMOUNT OF HAZARDOUS WASTE

In 2019 we focused on reducing hazardous waste. The target was to reduce the amount by 5% per square metre of wood flooring compared with 2018. The target was not reached and the result was an increase of 11%.

One reason why we did not achieve the target is shorter production series. This means more changes of surface treatment and thus increased amount of cleaning water used.

Target and action plan for 2020

The target of cutting the amount of hazardous waste by 2 per cent per square metre of wood flooring compared with the previous year.

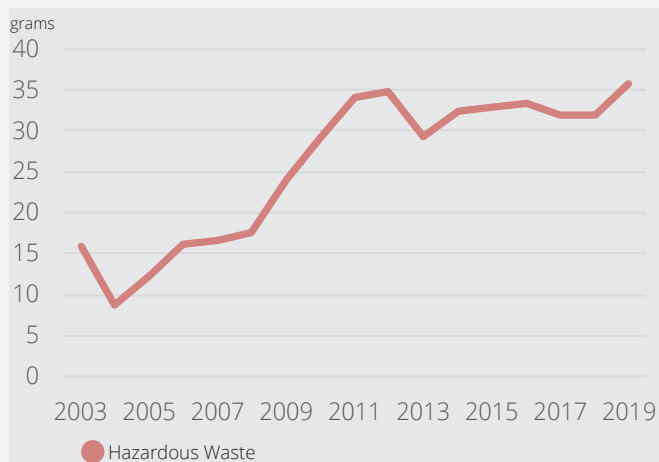
The target applies in all Kährs Group production units.

The action plan for Kährs Group Sweden includes activities in accordance with best practices for machine cleaning and reuse or recycling of cleaning liquids, which means to start treatment of cleaning fluids that are currently handled as hazardous waste.

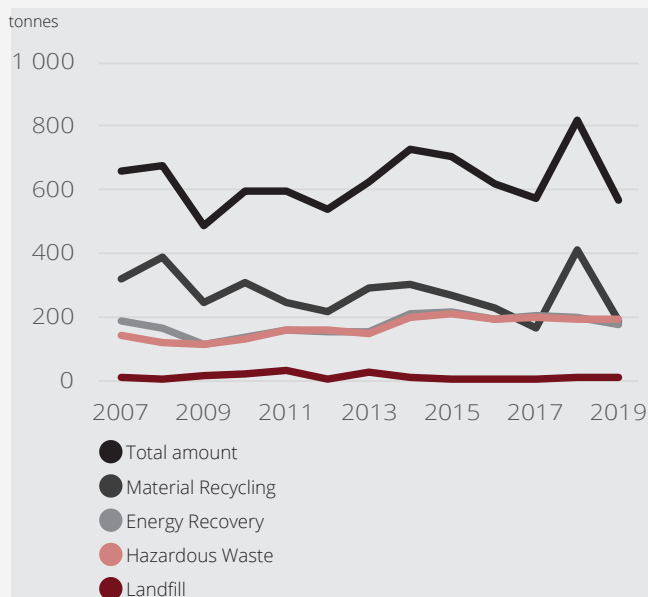
KÄHRS' WASTE STANDARD

Fraktion	Färg	Symbol	Exempel	Tar vägen
Blandskrot	Svart		Plåtbitar, skruv & mutter, stålband, plåtskyfflar, tomfat, tömda motorer och maskindelar	
Brännbart	Röd		Handskar, munskydd, plåster, skor, gummi, kläder, flaskor, hinkar, dunkar m.m....	
Plastemballage	Transparent säck		Transparent emballageplast som krympfilm och bubbel-plast	
Återvinningsbart papper	Vit eller blå		Tidningar, kataloger, kontors-papper	
Wellpapp	Brun eller nätkorg		Wellpapp	
Bobiner, Kantskydd	Blå containrar		Bobiner, Hylsor, Kantskydd, Fritt från annat material	

AMOUNT OF HAZARDOUS WASTE PER SQUARE METRE OF FLOORING



TOTAL AMOUNT OF WASTE TONNES PER FRACTION



Material efficiency

Our material flow consists primarily of wood materials and additive materials for the product, as well as production maintenance materials and fuels. An improved efficiency of materials reduces the demand for resources and the need for transport.

WOOD MATERIALS

Hardwood – Oak, Ash and Beech sawn in Nybro & Blomstermåla
Softwood for cores and back veneers, purchased sawn materials

AUXILIARY MATERIALS

Water-based adhesive for joining wear surfaces & pressing the various layers of the floorboard together

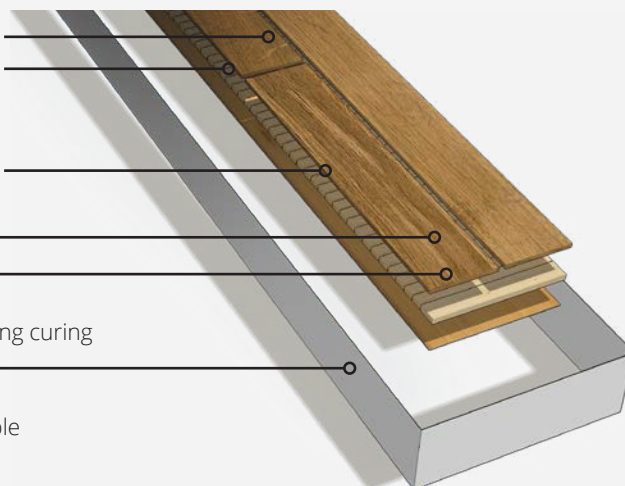
Filler used to even out the surface and fill in any knot holes

Surface treatment for performance and appearance

- Water-based UV curing lacquer
- Stains & oils – contain small quantities of VOCs, emitted during curing

Packaging materials

- Corrugated cardboard, wooden pallet – renewable, recyclable
- Plastic shrink wrap and metal banding – non-renewable, recyclable



We see a certain increase in the use of auxiliary materials per square metre of flooring produced. Consumption of packaging material, both renewable (wood+paper) and non-renewable (plastic) has increased due to changes in our product mix and the number of boards that can be placed in each pack. We have also decided that all packaged products must be placed on wooden pallets instead of blocks.

The product mix also affects the use of surface treatment products such as lacquer and oil from one year to the next.

MAINTENANCE MATERIALS

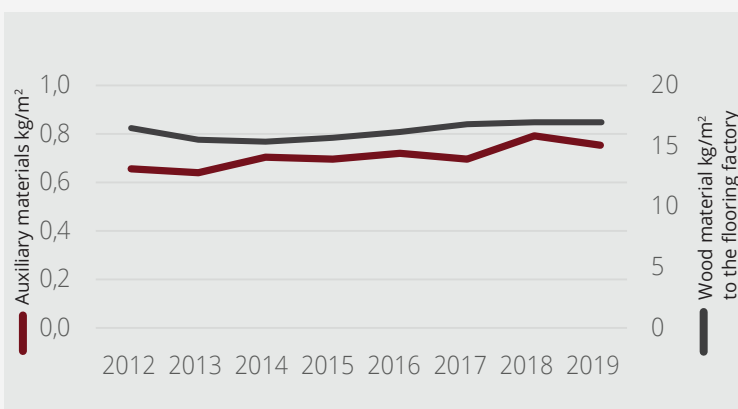
Almost all mechanical equipment needs some form of maintenance material, e.g. lubricants or hydraulic oils, in order to work. This material also needs to be replaced on a regular basis to ensure that our machines work as efficiently as possible. Regular maintenance and the replacement of worn parts and lubricants mean our equipment lasts a long time and we reduce the risk of faults occurring in the manufacturing process.

RISK-BASED CHEMICALS MANAGEMENT

Before any new chemicals are introduced for use in any of our production processes, they are individually assessed against environmental and safety criteria. Approved chemicals are listed in the chemicals registration system iChemistry, in which information about all chemicals is available via material safety data sheets. There are about 455 registered chemicals.

CONSUMPTION OF MATERIALS PER SQUARE METRE OF WOOD FLOORING MANUFACTURED (kg/m²)

The trend curve refers to sawn wood for the flooring factory and includes both own-sawn and purchased wood material excluding residual products such as sawdust and wood waste.



MATERIAL USE 2019	tonnes	kg/m ²
Wood material	150,000	29
Logs to the sawmills	89,000	
Sawn wood and semi-manufactures	61,000	
	tonnes	g/m ²
Additive materials for products	3,800	740
Renewable	1,000	200
Non-renewable	2,800	550
Maintenance chemicals	77	15
Renewable	44	9
Non-renewable	33	6

SIGNIFICANT ENVIRONMENTAL ASPECT: CONSUMPTION OF ADDITIVE MATERIALS

ENVIRONMENTAL IMPACT	RISK	TREND
Use of a non-renewable resources and risk for hazardous substances spreading into nature.	Hazardous chemical substances risk getting into the environment & being absorbed by plants, animals & humans	Stable development

Emissions – Emissions from manufacturing

Emissions are substances that leave a closed operation and enter the environment and are often associated with emissions of hazardous substances. Emissions from our operations mostly come from transport and manufacturing processes. Care and maintenance of our floors also gives rise to certain emissions.

Emissions to the atmosphere from production processes are primarily diffuse emissions of VOCs and dust from the filter installations.

VOCS

VOCs are volatile organic compounds found in our auxiliary materials (lacquer, oil, stain, filler and glue) and in various chemicals used in cleaning and maintaining machinery.

The largest amount of VOCs are consumed during solvent-based cleaning in the production process. Used solvents are treated as hazardous waste and are dealt with by approved contractors.

Emissions of VOCs mainly take place in the surface treatment process. Some substances

classified as VOCs used in hardening glue are consumed as they react and thus not released during the production process.

Of the total amount of auxiliary materials (non-renewable) used, less than 0.2% is VOCs released during the production process. Other VOC emissions come from maintenance chemicals, e.g. sprays.

DUST

Pipelines transport large quantities of wood shavings and wood dust through our large filter facility at Kährs Group's factory in Nybro. Preventive maintenance ensures that the filter equipment operates well. By measuring, examining and listening to the equipment, we are able to identify faults early on, so that we can prevent emissions and avoid costly repairs to the filters.

OTHER EMISSIONS TO THE ATMOSPHERE

The thermal energy is bought from a local energy company that uses biofuel from Kährs. The combustion process releases carbon dioxide, nitrogen oxide and dust. The carbon dioxide emissions contribute to the greenhouse effect, but biofuel does not cause a net increase in atmospheric carbon dioxide. However, nitrogen oxide contributes to acidification.

The energy conversion does not occur on Kährs' premises, and no emission is therefore stated for this in the report.

NOISE

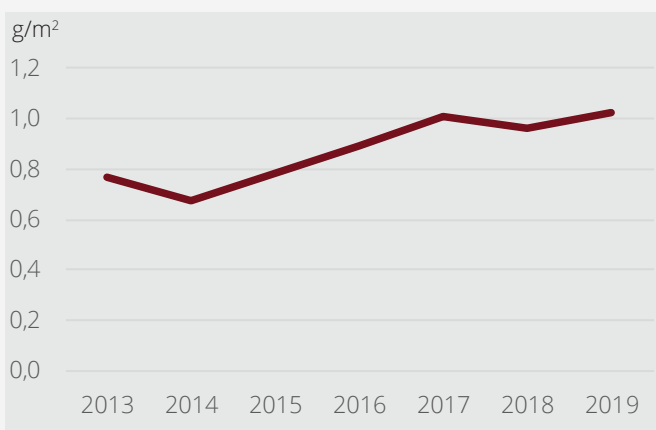
The location of Kährs' main factory in central Nybro is a challenge in terms of noise. Noise is caused primarily by fans and filters in the manufacturing plants, but also in connection with transport (loading/unloading or road/engine noise). Noise may be harmful or least perceived as a nuisance by people both inside and outside the company premises (employees, neighbours and local residents).

In 2019, the newly established pellet plant was incorporated into the noise mapping for the business. Even after this addition, the business meets the current conditions.



EMISSIONS OF VOCS

GRAMS PER SQUARE METRE OF MANUFACTURED WOOD FLOORING



EMISSIONS 2019	tonnes	g/m ²
VOC (Volatile Organic Compounds)	5.3	1.0
Dust (estimated quantity)	5.8	1.1

SIGNIFICANT ENVIRONMENTAL ASPECT: EMISSIONS TO AIR

ENVIRONMENTAL IMPACT	RISK	TREND
Emissions of substances that adversely affect air quality.	A disruption to equipment or a process can entail increased emissions.	Stable processes.

Our use of chemicals

Wood accounts for 98% of the content of the floors Kährs manufactures. To make a finished product that performs well in everyday life and that can handle the demands of use in modern environments, it is necessary to add materials and substances that enhances the wood's beauty, protects the surface and holds the construction. Auxiliary materials in the products and maintenance chemicals in production are simply necessary in the manufacture of wood flooring.

Our focus is to minimise the amount of chemicals in our processes. There are many good reasons for doing that; to reduce the impact on the environment and the risks for people who work with us or use the products are obvious reasons. Financially, it is also an advantage to keep down the amount of auxiliary material.

PROVIDES IMPROVED PERFORMANCE, LONGEVITY AND BEAUTY TO THE WOOD FLOORS

For us who produce wood flooring, the natural beauty of the wood is another important reason not to overdo the amount of lacquer applied to the surface. We work with our suppliers to develop effective and durable surface treatments that will do the job and protect the floor already at small amounts to preserve and enhance the feel and the beauty of wood.

HOLDS TOGETHER A GENIUS CONSTRUCTION

Other chemicals in our products are used to hold up the construction. The multi-layer/engineered construction of doors and wood flooring was invented by Gustaf Kähr already in the 1930 's and was a genius solution to problems such as. dimensional stability and resource utilization of wood material.

Engineered wood flooring simply means that the floor is built up in several layers of layers of wood that are placed in opposite directions to make the wood's inherent powers pull in different directions. This in turn reduces the swelling and shrinkage of the flooring boards when humidity changes in a room and will minimize the gaps between the boards.

The other big advantage of engineered wood flooring is to use the slow-growing hardwood only to the floor's visible, upper layer. A thrifty problem solving that saved both the deciduous forest and the wallet, and which has become a standard today. The design requires that the various layers are joined and we do this with water-based adhesive.

KEEP OUR FACTORIES RUNNING

Other groups of chemicals that are needed in order to produce flooring is motor fuels and maintenance material that lubricates the machines in our manufacturing facilities.

EXAMPLES OF ENVIRONMENTAL MILESTONES LINKED TO CHEMICALS:

1937 we were awarded the first patent for the multi-layer wood door that 1941 leads to the first patent for multi-layer engineered wood flooring

1958 we introduced the first factory finished floor

1984 we introduced the first solvent-free lacquer system

1999 first glueless joint, Woodloc® was introduced to the world

2011 we are certified according to DIBt, French VOC A+

2013 Kährs' first Swan, Nordic Ecolabelled products were launched. The Swan labelling means continuous tightening of set requirements on the products and the purpose is to help consumers choose the best products from the environmental point of view

2016-2017 tests are made in new technology for cleaning of process waste water, based on ozone.

2017 Kährs Group changed to a new adhesive system with very low levels of formaldehyde.

Chemical Mapping - The Foundation for Safe Chemistry

As demand is becoming more influenced by lifestyle trends, product development has led to greater variation and more advanced designs in our wood flooring ranges. Inventory, development and management of chemicals in order to reduce risks and impact on the environment has always been part of the development work but have gradually become more and more complex.

The management, administration and evaluation of chemicals is a constantly ongoing process in our operations where chemicals are part of the end product. Information must always be available for employees and users of products. Furthermore, both new and existing chemicals must be evaluated – partly before being brought into the business and then recurrently through the lifetime of the product. In order to meet these requirements, the Kährs Group introduced a new chemicals register in 2016.

DEVELOPING THE CHEMICALS PROCESS

After the initial mapping of chemicals in the system, the focus is now on constantly developing and improving our chemicals pro-

cess. We have established chemical criteria for the inclusion of new chemical products in our operations and we have continued to develop them in 2019. The purpose is to ensure that we bring in the most optimum alternatives available in the market, and that we constantly challenge ourselves and our suppliers to break new ground in improving the chemical products.

During 2019, we have continued to work on our chemical inventory and risk assessment of chemicals for parts of the Swedish operations.

Within Kährs Group, work has continued on examining our external producers' chemicals for flooring products and incorporating these into our chemical system.



Emissions – climate impact through transport

Kährs Group sells and delivers wood flooring all over the world, which involves many long-distance transport runs. The resulting fossil carbon dioxide emissions contribute to an increased greenhouse effect and thus an increase in the risk of climate change.

Kährs Group's emissions of fossil carbon dioxide come from transport and amount to about 16,700 tonnes. This is equivalent to 1.5 kg CO₂/m² of manufactured wood flooring within the Kährs Group. Fuel energy amounted to a total of 57,000 MWh.

SEA & ROAD DOMINATE

Calculations of transport emissions are based on data from our suppliers of transport services.

Cargo ships are used primarily to transport incoming wood material from Europe and other sources, and for transport of finished flooring to customers. Truck transportation is used for transport between suppliers and the production sites and for transport needs that cannot be served by ship or train. Most transportation work is via cargo ships, but the largest carbon dioxide emis-

sions come from road transport. Parts of the transport route for wood to the Blomstermåla sawmill use the rail network.

CLIMATE IMPACT FROM TRANSPORT

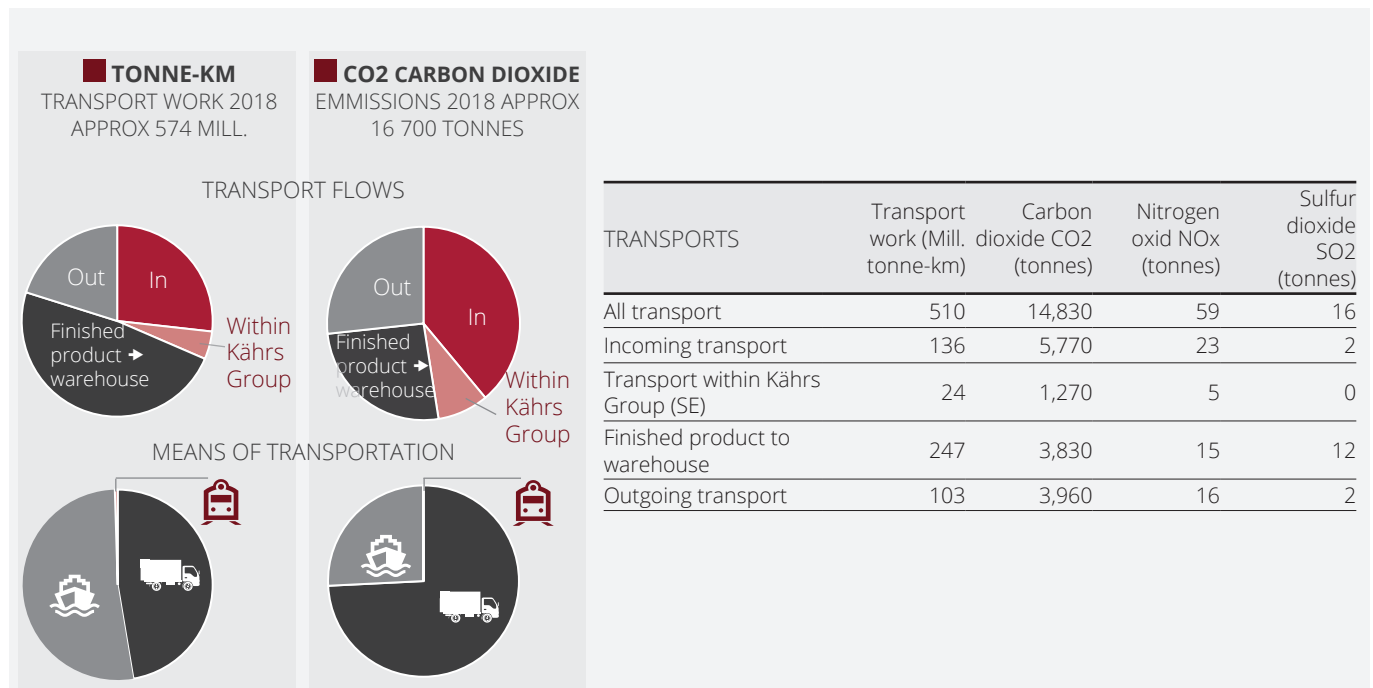
The fossil carbon emissions caused predominantly by truck transport contribute to a greater greenhouse effect and thus constitute a higher risk of climate change. Nitrogen oxide and sulphur dioxide contribute to acidification of lakes and water-courses.

MEASURES & ACTIVITIES

Our main activities to reduce carbon dioxide from our transport are to increase efficiency when planning logistics and to use transport methods that produce lower carbon dioxide emissions.

In 2019 we established new environmental criteria when procuring transport services. We continue working to increase reporting from our transport firms to us, in order to improve the level of detail in the data we use to calculate emissions from transport.

In 2018, a fossil-free transport flow was procured between the pellet factory in Nybro and Kährs pellet storage in Kalmar harbour.



SIGNIFICANT ENVIRONMENTAL ASPECT: CLIMATE IMPACT THROUGH TRANSPORTATION

ENVIRONMENTAL IMPACT	RISK	TREND
Emissions of carbon dioxide from fossil fuels into the atmosphere give rise to an increased carbon dioxide content and an enhanced greenhouse effect.	Procurement of less efficient transports.	Stable development



Transforming into sustainable internal transportations

The overall transformation of more sustainable vehicles and fuels in the industry is currently ongoing and for us at Kährs this not only concerns transports between plants and to our customers, but also transporting and handling materials at our facilities. Here at Kährs we consider transportations running on alternatives to fossil fuel, e.g. electricity, HVO or Biogas to be green and our goal is to have a fossil free fuelled fleet of internal vehicles in five years.

Looking at the entire fleet, all forklifts used indoors are electrical and we are currently transforming the vehicles used outdoor. When there are no electric options available, we will use the best possible solution as for example HVO for our heaviest machinery.

We also aim for the energy used at our plants to be sustainable, as the case in Nybro and all operations in Finland where the electricity is certified 100% from renewable sources.

In regards to external transportation, we encourage suppliers to

actively work reducing their emissions from transportation. We demand all suppliers to have a plan for constantly improving towards the most optional sustainable alternative, while we select the best possible means of transportation (e.g. train, and ship when possible). All vehicles used in transportation involving Kährs should be classified Euroclass 5 at the minimum. We request better and more detailed statistics from our transportation suppliers for follow-up and measures – when we get better understanding of our biggest impact areas we can also plan for more effective measures.

Sustainability and environmental actions are at the heart of Kährs Group and a sustainability approach characterizes the entire organization. This is also why we aim to adapt towards the UN Sustainability Development Goals (UN SDG) for 2030. One of the UN SDG's that is of high concern to us is "Climate action" and thus greener transports are a crucial part of our commitment to reduce our operations' impact on the climate.

Photo: One of the first electric forklifts in the fleet of 17 vehicles for outdoor heavy lifting at Kährs in Nybro Sweden.

REDUCED CARBON FOOTPRINT BY 10%*

In 2019, four diesel-powered forklifts were exchanged for electric forklifts. The change is expected to reduce the climate footprint from Kährs' production in Sweden by about 10% annually and by about 5% for the Group, all production units taken into account.

The estimated emissions reduction corresponds to:

- About 6.7 tonnes of carbon dioxide annually, or;
- CO2 emissions from 36 diesel-powered cars, each driven 1,500km at 0.6 l/10km

*) Calculated on Scope 1 and 2 emissions according to the GHG protocol's standard (Greenhouse Gas Protocol). Read more at <https://ghgprotocol.org>

WOOD FLOORING – A WAY OF STORING CARBON DIOXIDE

Via the wood flooring sold by Kährs Group in 2019, more than 140,000 tonnes of CO2 will be stored for up to 50 years in the floor installations completed. A wooden floor can have a life cycle of 50 years and can then be used as biofuel, since 98 percent of the product is wood.

Burning wood does not produce a net increase in atmospheric carbon dioxide, provided that the forest is replanted. Alternatively, the floor can be recycled into another wood-based product and will then continue to store carbon dioxide.

UN Agenda 2030 guides Kährs' sustainability work

Climate Positive and Beyond

In 2019, Kährs decided to focus its environmental and sustainability efforts on six of the global goals of UN Agenda 2030: 3) good health and well-being 7) affordable and clean energy 11) sustainable cities and communities 12) responsible consumption and production 13) climate action and 15) life on land.

Kährs sustainability program is integrated into all aspects of our work with an overall sustainability goal which we have called "Climate Positive and beyond". This means that we take responsibility for minimizing our environmental impact through small and large measures, by driving development through everyday improvements as well as sustainable innovations and investments.

For decades, Kährs, in collaboration with its customers, has become a world leader by offering floors that meet high expectations of quality and design, as well as innovative and sustainable solutions. Sustainability and the environment is central to Kährs Group and as the UN's global goals for a sustainable future are recognized by industries and societies around the world, Kährs adapts and integrates the six selected global goals into its overall business operations.



Kährs have chosen these six global goals in the areas where the business can make the most difference for people and the environment. By integrating the objectives in the business operations, they become a support in our commitment to offer products that contribute to a good indoor environment, are recyclable, maintain a high standard and have a long life and are based on responsibly sourced materials.

Agenda 2030 for sustainable development and the 17 development goals were adopted by all the UN Member States in 2015. All signatories then jointly decided to work towards achieving social, economic and environmental sustainability by 2030. Read more at <https://www.un.org/sustainabledevelopment/>

The Nordic Swan Ecolabel provides strong support for Kährs sustainability work



Kährs has an extensive program for ecolabelling and certification from third-party organisations and one of the most well-known is the Nordic Swan Ecolabel. In 2013, Kährs was one of the first wood floor manufacturers whose products were certified in accordance with the Nordic Swan Ecolabel's environmental criteria.

The Nordic Swan Ecolabel is the only certification designed to help consumers make informed and responsible purchasing decisions, and Kährs sees it as a good help for its customers to choose the most sustainable floors.

Examples of the benefits of an eco-labeled wood floor:

- Wood from sustainably managed forests

- Meets strict requirements on substances that are hazardous to health and the environment
- Guarantees low emissions and good indoor air quality
- Are manufactured in an energy efficient way
- Facilitates for consumers and professional buyers to choose the best products from a sustainability standpoint

The Nordic Swan Ecolabel is an eco-label of type 1 (ISO 14024) which includes the world's most recognized and strict environmental certifications. Type 1 certify that the products meet the requirements set by an independent party, that the requirements are continuously renewed and expanded, and developed from the product's life cycle perspective. The Swan and Kährs are both focused on selected global goals in the UN Agenda 2030 for a sustainable future.

The fact that over 180 of our wood floors are Nordic Ecolabelled is proof of that we are constantly reviewing and improving our operations to meet sustainability requirements, which in turn challenges us to find new ways to contribute to a more sustainable society.

CONTRIBUTES TO MORE SUSTAINABLE CONSUMPTION

One advice, for anyone who wants to make more sustainable choices in everyday life, is to look for products with the Nordic Swan Ecolabel. Each company and each product that bear their eco-label has been thoroughly reviewed. And the overall goal is to contribute to more sustainable consumption

Emissions – Emissions from use of the product

Millions of square metres of wood flooring from Kährs Group are installed in fine homes, and in quality commercial and public premises every year. Cleaning and maintenance lengthens the lifespan on the flooring, but also involves the use of cleaners and maintenance chemicals.

As a manufacturer we have a responsibility to make floors that are easy to clean and care for and to suggest suitable cleaning and maintenance methods for various application areas.

Care and maintenance instructions accompany every delivery of wood flooring and detailed information is available in many different languages on our website and on our products. Care and maintenance are important components of our "flooring schools", where floor contractors, floor installers and store staff are trained.

Our own maintenance products have been formulated and tested to combine effectiveness with minimised environmental impact. Generally we advocate dry methods of cleaning for daily care and our (no VOC) Cleaner product when necessary.

Oiled floors require treatment after installation, then periodically as necessary. Kährs Satin Oil is used for maintenance.

EMISSIONS FROM WOOD FLOORING

All wood flooring can generate emissions, for example, of formaldehyde and VOCs, both naturally from the wood itself and via additives. Emissions from a wooden floor decrease over time and within a month from installation the levels are so low that they cannot always be measured. There are of course a range of guidelines and labels to help users choose low-emission products. Wood flooring products from Kährs Group meet the criteria of some of the market's strictest environmental labels, such as the Nordic Swan Ecolabel, E1, M1



and CARB 2, to name just a few. Organisations and government agencies lay down requirements for processes by which analyses are performed. Kährs Group regularly analyse the wood flooring it produces for compliance with requirements for and guidelines on emissions during the in-use phase. These analyses follow relevant standards for analysis of VOCs and formaldehyde. A higher proportion of environment-labelled wood flooring creates the conditions for lower emissions during use.

Kährs focuses constantly on reducing its use of products containing VOCs and formaldehyde. In 2017, Kährs switched to a new amino-based bonding system with a very low formaldehyde content.

PRODUCT MAINTENANCE

Excessive use of aggressive cleaning agents and chemicals benefits neither the indoor environment, the environment or the wood floor. We recommend a mild cleaner, sparingly used. The best way to protect the floor is to prevent dirt/grit and debris from spreading into the room using effective dirt barrier systems at entrances and to wipe up spills quickly.

KÄHRS FLOORING SCHOOL

We train flooring professionals, building contractors and store staff on site at our premises in Nybro where we provide information on suitable methods of care and maintenance. This advice is also included in presentations during customer visits and at events around the world.

ANALYSIS OF EMISSIONS OF VOCs AND FORMALDEHYDE AFTER 14 DAYS' ANALYSIS

Analysis in acc. with CDPH-IAQ, ISO 16000-6:2011, EN 6516:2017 and EN 717-1. The analysis are based on samples from lacquered 3-strip, oak flooring. Limit for formaldehyde from CDPH has been 9 µg/m³ since 2012.

Concentration in Classroom, CDPH		2011	2016	2018
Formaldehyde	µg/m ³	4	<2	<2
TVOC (C ₅ -C ₁₇)	µg/m ³	320	280	44

SIGNIFICANT ENVIRONMENTAL ASPECT: EMISSIONS FROM USE OF THE PRODUCTS

ENVIRONMENTAL IMPACT	RISK	TREND
Recommended methods can reduce environmental pollution, e.g. less emission of chemicals and extend the life of the product. Emissions from the wood floor are monitored according to the requirements for different product certifications.	Incautious care of wood flooring may result in unnecessary emission or use of chemicals.	Positive development – increased share of environmentally certified products an clear recommendations for care.

Energy efficiency – Use & biofuel production

Efficient energy consumption reduces environmental impact and, in our case, results in renewable energy becoming available to consumers who still use fossil fuels. All conversion of energy affects the environment and the climate via the consumption of fossil fuel and the production of acid gases. All electrical and thermal energy at Kährs' Swedish facilities is generated from renewable sources.

The electricity used is classified as 100 per cent renewable. The biofuel that we supply to Nybro Energi is recycled to the production facility at Nybro in the form of renewable thermal energy. Nybro Energi certifies that the recycled thermal energy corresponds to the energy generated from biofuel.

- Ash from combustion in the biofuel boilers is returned to the local forests as a nutrient.
- The total volume of fossil-based fuels in 2019 equated to 54,000 MWh, being used in transport to and from Kährs Group's production facilities, transport to warehouses

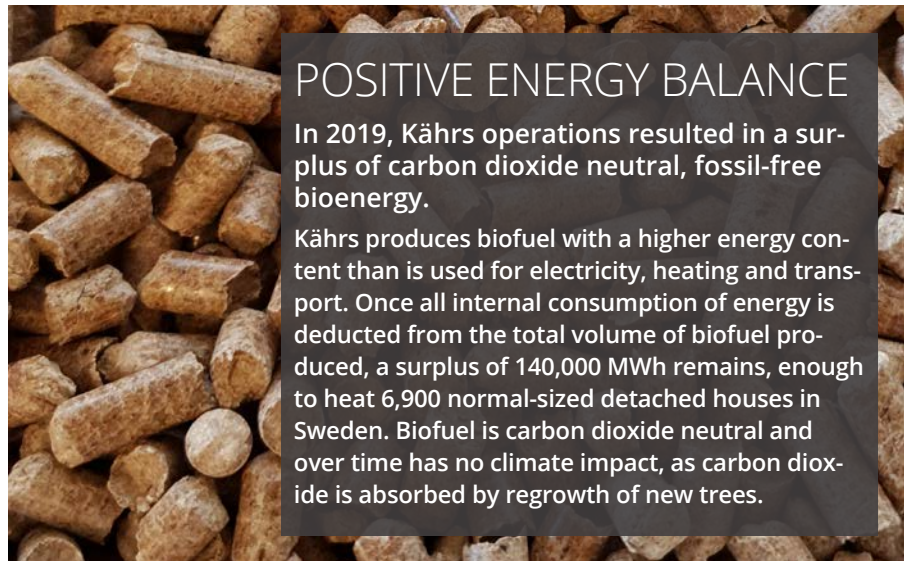
and customers and internal transport within the factory facilities.

- Because this represents the energy for all transport in Kährs Group, the specific energy consumption is 5.8 kWh/m². Other energy data applies to the operations in Sweden.

ENERGY CONSUMPTION

The major share of energy consumed in Kährs Group's Swedish operations is used in drying timber, heating for pressing and transport (as described on page 24).

- We now manufacture SBP-certified (Sustainable Biomass Program) pellets from chips from machining equipment.
- We also produce biofuel through residual products from our sawmills, which consist of sawdust, bark and chips.
- The ash from the combustion in the biofuel boilers is spread back to the local forests as a nutrient.



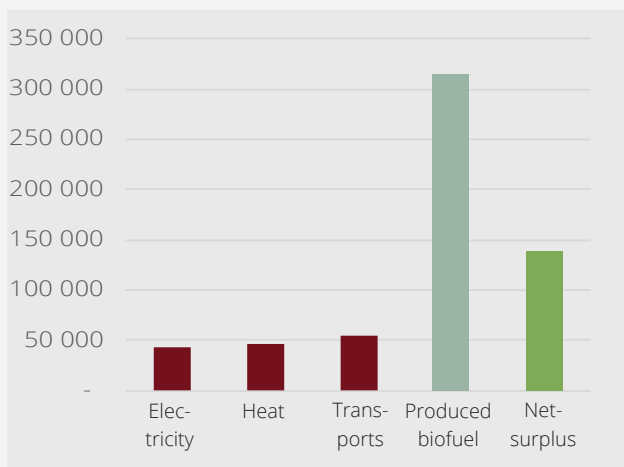
POSITIVE ENERGY BALANCE

In 2019, Kährs operations resulted in a surplus of carbon dioxide neutral, fossil-free bioenergy.

Kährs produces biofuel with a higher energy content than is used for electricity, heating and transport. Once all internal consumption of energy is deducted from the total volume of biofuel produced, a surplus of 140,000 MWh remains, enough to heat 6,900 normal-sized detached houses in Sweden. Biofuel is carbon dioxide neutral and over time has no climate impact, as carbon dioxide is absorbed by regrowth of new trees.

ENERGY SURPLUS, MWH 2019

The total amount of biofuel produced and delivered from our plants corresponds to energy use of 12,600 homes in Sweden (based on the Consumer Agency's data on the energy consumption of a normal house per year).



ENERGY	MWh	kWh/m ²
Used electricity	44,000	8
Heat consumption	46,000	9
Transportation energy (fossil) Kährs Group	54,000	6
Production of biofuel	315,000	61
Net-Energy Produced (Carbon Neutral)	140,000	27

SIGNIFICANT ENVIRONMENTAL ASPECT: ENERGY USE

ENVIRONMENTAL IMPACT	RISK	TREND, se graph on page 29
Acidification, emission of carbon dioxide and the consumption of resources in the conversion of energy.	Increased use of energy.	Stable development



Environmental Target Energy Use

REDUCE ENERGY USE PER M²

The target for 2019 was to produce and carry out energy efficiency measures that are estimated to cut energy use by 2% compared with 2018. The target was not reached, mainly because several parts of the action plan were not completed or were tackled late in 2019.

The legally required energy audit started within the company in 2017 and resulted in new proposed savings. The energy survey gives us greater knowledge of our processes and increases focus on energy efficiency.

We carry out continuous measurements of energy use in our premises and processes. Through these measurements we have identified savings potential in existing equipment, which is then addressed. This is ongoing work that continues to identify future opportunities to reduce energy use.

Total energy consumption decreased in 2019 due to a lower production volume compared to the previous year.

COMPLETED AND ONGOING ACTIVITIES:

- New routines for shutdown during breaks, weekends and holidays, at sawmills and core production
- Replacement of UV ovens for curing of filler
- Renovation of dryer doors. Kährs regularly renovate dryers and drying gates
- New motors and inverters for a dryer
- Frequency control hydraulic motors in single-press line
- Improved control of extraction fans at the sawmill
- Dryer doors have been sealed and a programme of measures continues.
- Motorised drives are being replaced by units in a higher energy class as part of an ongoing process.

Energy use is affected by many factors, including weather, mild/severe winters and increases or decreases in production volumes.

Because of reduced log inventory, the proportion of air-dried sawn materials declined. It has become necessary to dry more fresh wood, which has increased our energy consumption per dried m³.

We have therefore continued our strategic work to increase the amount of air-dried material in the coming years, thus reducing energy consumption.



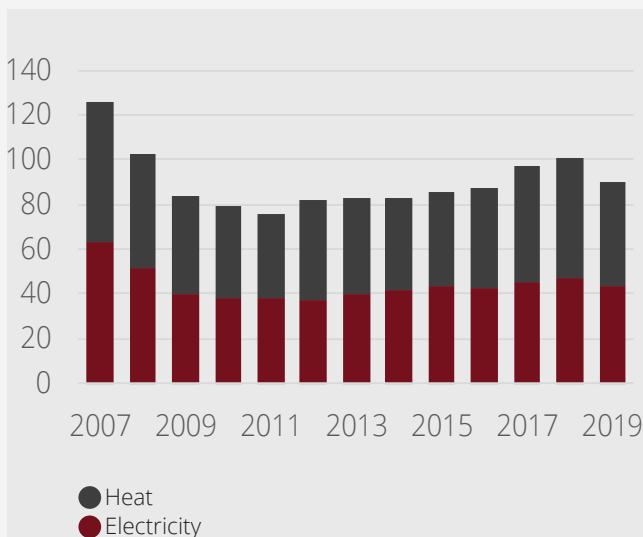
Kährs uses Schneider-Electric's Power Monitoring Expert software to monitor and evaluate energy consumption for the factory in Nybro at facility level and at machine level.

Targets and action plan for 2020

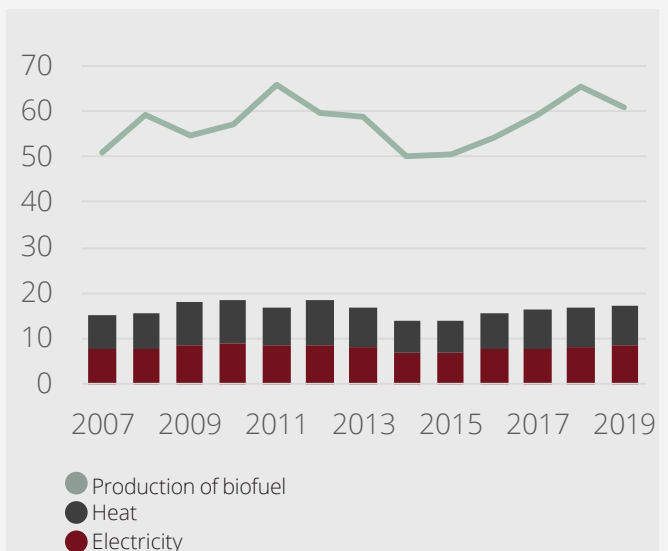
More efficient use of energy remains an environmental target for Kährs Group. The target for Kährs' Swedish operations is to carry out energy efficiency measures that are estimated to cut energy use by 3% in 2020, compared with 2019 as the reference year.

The action plan incorporates renovation of driers, exchange of 2 UV-ovens, heat recovery from compressors and automatic gates and everyone contributing towards working energy-efficiently.

TOTAL ENERGY USE (MWh)



ENERGY USE AND PRODUCED BIOFUEL (kWh/m²)



Risks

Legislation has moved in the direction of tighter requirements for risk assessment and action to reduce risk. Risk is affected by both probabilities and consequences of an event.

OUR WORK ON RISK

In the Kährs Group in Nybro and Blomstermåla, we work systematically with risk assessments. Changes are valued, if new risks can arise, the recurring rounding of the operations from work environment, environmental and safety perspectives provide input to what occurs in our business. We also consider risks and opportunities from a strategic perspective in order to best develop the business.

Following an annual analysis of environmental risks, an action plan is drawn up to address what must be remedied in order to mitigate these risks.

Our risk-thinking has several starting-points:

- During our assessment of environmental aspects, a risk assessment of these aspects is performed
- We use the WIA occurrence reporting system with risk identifiers and a common system of global follow-up for major incidents
- We have introduced "Business Context" and SWOT analysis for environmental issues
- Results and observations from audits are shared in an internal global network

- Environmental and fire protection inspections

OUR BIGGEST RISKS

According to the risk analysis, the biggest environmental risks are associated with fire, filter breakdown and handling of chemicals. The risks of water and soil pollution arise mainly during loading and unloading of chemicals, but procedures are in place to prevent incidents and minimise environmental impact if an accident should occur.

ACTIONS

Actions taken were followed up and a new action plan produced, with handling of chemicals again one of the heavyweight topics.

More expertise in and better procedures for purchasing and handling of chemicals via the chemicals management system make the right response more likely.

Incidents involving chemical spillages have demonstrated that Kährs employees react in the right way when something happens, enabling us to prevent discharges and environmental impact.

Internal and external audits

Audits serve as an aid in monitoring how important processes are operating. The audits verify that we have a procedure in place that is governing in line with the requirements and goals laid down in Kährs' management system.

INTERNAL AUDITS

Management prioritises the processes that are to be assessed via the audits. The standards for the individual management systems (SS-EN ISO 9001 and SS-EN ISO 14001, as well as the EMAS Ordinance) specify requirements for internal audits.

We conduct internal audits at scheduled intervals to determine whether the management system has been introduced and maintained in a fit-for-purpose way, but also to identify areas for improvement.

Internal auditors with various roles in the Company represent a highly competent audit team. Planning, implementation and reporting serve to evaluate and support Kährs' programme of continuous improvement as per the PDCA cycle. Audits are performed on the basis of Kährs' Group-wide environmental and quality management system. Verification of the efficiency of the system in the different facilities forms part of the audit process.

Internal audits are conducted on a broad front throughout the Kährs Group and in 2018 we audited:

- Work on environmental targets
- FSC / PEFC
- Crisis management
- Safety Committee Work
- Waste management

Consolidated reports are sent to the management group and the management group can influence the audit plan.

EXTERNAL AUDITS

Periodic audits of the management system for environment (ISO 14001) and quality (ISO 9001) were carried out during the year. An external audit of Kährs' FSC® certification was carried out. Audits were also conducted to verify that we meet the requirements for our certified flooring products and for the energy survey in our ISO system.

Local conditions – Kährs Group Nybro

Kährs Nybro facility is subject to a licence that permits the facility to produce up to 20 million m² of wood flooring per year. The licence also includes sawing up to 200,000 m³ of timber annually.

AUTHORITY-RELATED EVENTS IN 2019:

- During the year no registration of change has been submitted to Nybro municipality.
- Two inspection visits from the local environmental administration have been carried out.
- Measures to improve quality of stormwater and process water in progress.
- During 2019, Kährs has included the pellet plant in the company's noise mapping, and current noise conditions are contained.
- No external complaints were received during the year.



Permit conditions

Term (Date of issue)	Guideline	Status
3. Discharge of VOC (2005-0204)	Max. 0.75 tonnes of VOCs per started million m ² . The applicable limit value is 15 tonnes of VOCs per year.	Met: 0.57 tonnes per started million m ² .
4. Noise (2005-02-04)	55 dB(A) weekdays, Monday–Friday 07:00–18:00 45 dB (A) at night 10:00 p.m. to 7:00 50 dB (A) at other times Maximum momentary noise level at night is 55 dB (A).	Measures have been carried out to reduce noise emissions. The measures helped to reduce noise at one measurement point, but additional measures will be taken to meet the requirements set. The business currently meets the requirements for noise mapping.
5. Noise (2005-02-04)	At a new establishment, measures shall be taken to reduce noise emissions to the Swedish Environmental Protection Agency's guidelines for newly established industry.	In 2019, the installation of the pellet plant was assessed. It passed the requirements for new establishment.
8. Decontamination and after-treatment	Examine the need for decontamination and after-treatment measures	MIFO-FAS2 was conducted in 2013. No action necessary. Follow-up and registration takes place when groundwork is carried out.
9. Dust (2008-11-25)	2 mg/Nm ³ dry air, measured by random sampling.	Measurement for dust on six filters during 2019. Two filters didn't meet the requirements at the first measurement. An action plan to lower the emissions was drawn up and carried out. At a new control the filters met the requirements.
10. Water (2010-09-09)	Process wastewater shall undergo sedimentation and adsorption processes before it is released to the municipal sewage/wastewater network.	Met via one treatment plant with a sedimentation stage and ozone cleaning or a filter step. The ozone facility has not attained operational status and the company informed the authorities of this.
11–14. Water (2010-09-09)	The residue arising from the sedimentation and adsorption shall be disposed of as waste. Outgoing water must not damage the municipal sewage/wastewater network, water treatment plant or the recipient. In its environmental report, Kährs shall annually present its work to reduce the amount of process wastewater and pollutants into the municipal sewage treatment plant.	Solid waste, glue and sawdust from the water treatment processes are treated as combustible waste. Low pH in outgoing water following sedimentation, pH adjustment does not take place continuously in the ozone step, because the operational status of the ozone step has not been stable, and the company has informed the authorities of this.

* The environmental report (submitted to the government committee, Myndighetsnämnden, in Nybro Municipality) comments on all the conditions.

Local conditions - Kährs Group Blomstermåla

The operations in Blomstermåla do not require a separate permit, but are regulated by a number of precautionary and protective measures regarding issues such as irrigation, water and air emissions, management of chemicals, waste and noise. The sawmill in Blomstermåla sawed 21,000 m³ of timber in 2019. In 2019, the sawmill produced rough-edged blocks and planks, immediately after the division of the log in the band saw. These are then further processed in the Nybro factory.



IRRIGATION

The watering system operated the entire season. The diversion to the river Alsterån is mainly via ground infiltration, but runoff from the drainage area leads to the river bank area.

At the most, about 3,290 m³ of timber was stored in the water storage. Analysis of TOC in irrigation water show results of 23 mg TOC/liter. Totally approx. 3,300 m³ of logs were irrigated with 36.000 m³ river water.

RISKS IN CHEMICALS MANAGEMENT

The risk of accidental discharge into the nearby river Alsterån that flows alongside the sawmill is one of the most important environmental aspects connected with the Blomstermåla sawmill. Kährs is included in the Alsterån Water Council and follows the program for recipient monitoring. Emergency kit boxes in case of chemical spills have been placed around the sawmill. Protective equipment for storm drains (for surface runoff water) is positioned in selected locations

to be available if any spillage occurs close to storm drains.

Oil storage and hazardous waste storing have improved in terms of marking.

TRANSPORT

Transport is also a significant environmental aspect for the operations in Blomstermåla. Over 80 per cent of the imported logs delivered to Blomstermåla were transported by train via Oskarshamn or by boat to Kalmar in 2019. The Swedish logs are primarily transported by truck and constitutes of two-thirds of the totally delivered amount.

EMISSIONS TO AIR AND NOISE

The new sawdust storage facility has been in use since 2016 resulting in the dispersal of sawdust in the area around the River Alsterån has ceased. The sawmill operated on morning and afternoon

shifts in 2019, which is not assessed to affect fulfilling of the noise conditions.

AUTHORITY INSPECTION

The Blomstermåla operations are classified as a so called Class C facility. The Environment Committee in the Mönsterås Municipality is the supervisory authority. The last inspection by the local authorities was conducted in December 2018. Environmental aspects and demands are managed and followed up within our self-monitoring system.

Approval

Kährs Group's subsidiary company AB Gustaf Kähr and its Swedish units are included in our quality and environmental management system according to ISO 14001 and ISO 9001 as well as EMAS registration. Certificates are available for download at www.kahrs.com.

This environmental report according to EMAS is controlled by DNV GL, which is a SWEDAC-accredited environmental auditor (accreditation number 053). DNV-GL has reviewed Kährs Group's Swedish production plants and has found that they have environmental management systems that meet the requirements stated in the EMAS regulation (No. 1221/2009) and EU2017/1505. From 2006 and forward, Kährs' Swedish units are registered collectively as Kährs Nybro. S-000055.



APPROVED

DNV-GL has reviewed the environmental report for 2019 and has found it to be accurate, and sufficiently detailed to meet the requirements in EMAS.

The report includes the production units in Nybro as well as Blomstermåla and AB Gustaf Kähr's collective functions in Nybro and Malmö.

Solna 2020-06-02

Ann-Louise Pått
Management Representative

DNV GL - Business Assurance

Certificates



EMAS



FSC®



ISO 9001



ISO 14001



PEFC

	EMAS	FSC®	ISO 9001	ISO 14001	PEFC
Year	1997	2005	1999 252139-2017-AQ- SWE-SWEDAC	1997 252139-2017-AQ- SWE-SWEDAC	2013

EMAS has the purpose of promoting environmental improvements. It is a voluntary EU programme that requires public reporting of environmental conditions.

FSC® is an international organization working for global responsible forest management that takes into account both the environment and the people living in and from the forest. The Kährs "chain of custody" certification means that we may buy FSC material and manufacture and sell flooring products that are "FSC Mix certified".

ISO 9001 is the international quality management system.

ISO 14001 is an international standard for environmental management, designed to protect the environment, prevent pollution and achieve constant environmental improvements.

PEFC (Programme for Endorsement of Forest Certification) is an international system for sustainable forest management. Kährs has a chain of custody certificate.

About Kährs Group

Kährs Group is a leading European manufacturer and distributor of premium flooring. The Group is the market leader in wood flooring in Sweden, Finland and Russia and also holds strong positions in other key markets such as Norway, the UK and Germany. The Kährs Group's products are sold in more than 70 countries with its own staff in 17 countries.

The Kährs Group provides flooring and accessories with a focus on premium products with a high design content, good quality, a responsible approach to the environment and a high level of service. The Group's brand portfolio includes two well-known global brands, Kährs and Upofloor, and a number of local brands.

Kährs is the Group's main brand and the original in modern wood flooring. In 2019 the offering of products from Kährs was expanded to include more product categories such as Luxury Vinyl Tiles (LVT) and textile flooring.

Upofloor is a leading brand in PVC-free resilient flooring for public spaces, such as hospitals and schools. The Kährs Group has a leading position and is a pioneer in the PVC-free resilient flooring segment, with the launch of the world's first PVC-free resilient flooring (2004) and the world's first homogeneous PVC-free resilient flooring (2014).

In its more than 160 years of history, the Kährs Group has built a strong brand

through innovative flooring solutions and close relations with customers, suppliers and forest owners, which has helped to confirm the company's strong position in the market. The Kährs Group constantly develops its products to create added value for private, commercial and public spaces through beautiful and environmentally sustainable wood and resilient flooring with a long lifetime.

The Kährs Group has production networks in strategic locations, near to raw materials and main markets, to ensure competitive quality products and punctual deliveries. Operations are adapted to local conditions in terms of sales strategy, marketing strategy and distribution, but with harmonised product platforms that enable effective use of capacity and flexible production planning. Through this the Kährs Group has adapted its production to attain a balance between economies of scale and a local presence. The company has six production units in

Sweden, Finland, Russia, Romania and Poland. Technical development and the company's centre for the design of wood-based multilayer flooring are based in Nybro, Sweden, while product development of PVC-free resilient flooring takes place in Finland.

The Group employs about 1,700 people and has annual sales of approximately EUR 300 million.



UPOFLOOR





ISO 9001



ISO 14001



FSC®



PEFC

Unit	ISO 9001	ISO 14001	FSC®	PEFC
Wood flooring manufacturing				
Maklino, Russia	Yes	Yes	Yes	Yes
Satulung, Romania	Yes	Yes	Yes	Yes
Białośliwie, Poland	Yes	Yes	Yes	Yes
Resilient flooring manufacturing				
Ikaalinen, Finland	Yes	Yes	Not relevant	Not relevant
Nokia, Finland	Yes	Yes	Not relevant	Not relevant

Ecological balance data 2019 – Kährs Group

	Total		Specific amount		
			Wood	Resilient	
Use of Energy					
Electricity (renewable)	51,750	MWh	6.17	2.17	kWh/m ²
Electricity (non-renewable)	26,406	MWh	2.85	3.26	kWh/m ²
Heat (renewable)	73,892	MWh	8.91	2.40	kWh/m ²
Heat (non-renewable)	4,189	MWh	0	3.81	kWh/m ²
Vehicle fuel (fossil)	3,459	MWh	0.43	0.01	kWh/m ²
Produced biofuel	364,488	MWh	45.56	-	kWh/m ²
Material Use					
Wood material to products	180,731	ton	22.59	-	kg/m ²
Chemicals for products, adhesives, hardeners, lacquers, stains, oil etc.	4,448	ton	0.56	-	kg/m ²
Polymers for resilient products	4,431	ton	-	4.03	kg/m ²
Reused in production	1,214	ton	-	1.10	kg/m ²
Total water use	54,066	m ³	6.66	3.27	l/m ²
Of which is potable water	30,647	m ³	3.83	-	l/m ²
Emissions					
Waste	10	ton	0.002	-	kg/m ²
VOC	13	ton	0.002	-	kg/m ²
Waste					
To material recovery	320	ton	0.03	0.04	kg/m ²
To energy recovery	693	ton	0.02	0.47	kg/m ²
Landfill	600	ton	0.05	0.17	kg/m ²
Hazardous Waste	279	ton	0.03	0.005	kg/m ²
Production					
Wood Flooring	8.0	milj. m ²			
Resilient Flooring	1.1	milj. m ²			

Ecological balance data for 2019 refers to all Group production units engaged in the manufacture of flooring.

Wood flooring is manufactured in Nybro and Blomstermåla in Sweden, Maklino in Russia, Satulung in Romania and Białośliwie in Poland.

The Group's resilient flooring was manufactured at the production units in Nokia and Ikaalinen, Finland. The production unit in Nokia was however only operational the first six months and then it was discontinued.





A history characterised by innovations & major progress in our environmental work

HISTORY

In 1857 Johan Kähr the elder moved from Mönsterås to the small, but thriving community of Nybro in Småland. He brought with him a lathe and a few other tools to set up a shop crafting wooden utility goods. These simple beginnings became the foundation of the modern Kährs Group of today.

In 1919, Gustaf Kähr, grandson of founder Johan Kähr, set up the company AB Gustaf Kähr. Under his leadership the company developed and became an important and innovative producer of wooden doors, toys, furniture and flooring. Gustaf was dedicated to finding efficient ways of using the wood raw material and improving the stability of wood when used as building materials. His perseverance paid off when in 1937 he received the patent for the invention of the modern multi-layer, laminated door.

Following upon this success he worked hard to find a solution for the problem of gapping, twisting and cupping of wood floors. After several years Kährs was awarded a patent, in 1941, for the invention of today's modern engineered hardwood floor, the multi-layer floor.

In 2012 AB Gustaf Kähr and Karelia-Upofloor Oy merged to form Kährs Group.

KÄHRS GROUP TODAY

Today, Kährs Group is a group operating worldwide, with production in several locations in Europe. Our product portfolio has been complemented with resilient flooring for use in environments with high traffic, needing low environmental impact, with the main focus for PVC-free, plasticizer-free, low-VOC products.

Our objective is to provide the market with flooring that is beautiful, durable, easy to install and more sustainable. We're proud that people all over the world appreciate our products. Today, our floors can be found in fine homes, offices, shops, hotels, concert halls, theatres and sports arenas from Europe and Asia to the Americas.

ENVIRONMENTAL MILESTONES

Kährs has always been at the forefront when it comes to innovative development. Developments in the early years of the com-

pany often comprised utilising resources more efficiently, striving for what today is considered sustainability:

- 1921** we began using waste wood as biofuel for steam energy
- 1937** we were awarded the first patent for the multi-layer wood door
- 1941** we received the first patent for multi-layer engineered wood flooring
- 1958** we introduced the first factory finished floor
- 1984** we introduced the first solvent-free lacquer system
- 1997** ISO 14001 certification & EMAS registration achieved
- 1999** first glueless joint, Woodloc® was introduced to the world
- 2004** we launched the new generation Activity Floor, pre-finished, no job site shutdown, and today is FSC® and DIN certified.
- 2005** FSC certification
- 2010** we opened the first LEED certified (green) warehouse in Scandinavia
- 2011** we are certified according to DIBt, French VOC A+
- 2011** we made the first wood floor made from dual labelled FSC®-Fairtrade certified wood
- 2013** Kährs' first Swan, Nordic Ecolabelled products were launched. The company's Swedish production units became PEFC certified.
- 2014** investment in a new, industry leading production line for advanced flooring designs & better utilisation of oak raw material
- 2015** Final sealing of the old landfill facility on Kährs' site in Nybro
- 2016-2017** investments are made in new technology, for cleaning of process waste water, based on ozone.
- 2017** Kährs Group certified under a common ISO 14001 certificate. Change to new adhesive system with very low levels of formaldehyde.
- 2019** A brand new plant for production of wood pellets is opened. Makes biofuel from Kährs available to more users than the previously recovered wood powder.

Definitions

ADDITIVE MATERIAL

Material other than wood that is included in finished wood flooring. e.g. glue, lacquers.

AGENDA 2030 & GLOBAL GOALS

Agenda 2030 and the 17 global goals for sustainable development were adopted by the world's leaders in 2015. The goals are intended to help bring about socially, economically and environmentally sustainable development in all countries of the world by 2030.

AUTHORISATION OF PERMITS

Process of decision making on permits for activity that can be dangerous to the environment. Committees, the ECD and the application are involved. The decision is taken by the Environmental Inspection Committee of the County Administrative Board.

BASTA

A database of construction and plant products that meet BASTA's stringent requirements for chemical content. BASTA is used by the construction industry for the selection of better products. bastaonline.se

CARB 2

California's environmental legislation, California Air Resources Board, phases 1 and 2, regulates requirements on formaldehyde in products.

CARBON DIOXIDE (CO₂)

Is included in the natural cycle and contributes to the greenhouse effect. Burning fossil fuels results in a net increase in carbon dioxide, which may affect the climate.

CIRCULAR ECONOMY

A collective term for economic models for business opportunities in which circular process are used in a company, society or organisation instead of linear processes that up to now have been dominant.

DNV GL

DNV GL Group. The certification body for Kährs' environment and quality management system, as well as EMAS and FSC.

DUST

Particles that can cause contamination if discharged.

E1

A requirement for formaldehyde emissions according to European Standard EN 14342:2005 (Wood Flooring), class E1 is <0.124 mg/m³.

EMAS

Eco-Management and Audit Scheme. The EU's environmental management and environmental auditing regulation.

ENVIRONMENTAL ASPECT

Part of an organization's activities, products or services that affect or could affect the environment. Kährs' significant environmental aspects are identified, evaluated and prioritized. Kährs' significant environmental aspects, outcome and how we work with them are described in this report.

ES

Energy survey in accordance with Swedish Act (SFS 2014:266) on Energy Surveys at Major Corporations.

EUTR

EU Timber Regulation: Prohibits operators in Eu-

rope from selling illegally logged timber and products in the EU market. Legally logged timber is defined as timber produced in accordance with the laws in the country where it is logged.

FORMALDEHYDE

A toxic compound that is found naturally in green plants (including trees) and fruit. Also found in many glues. The glues used by Kährs are within the E1-norm.

FOSSIL FUELS

Oil, coal and natural gas which are not classified as renewable.

FSC®

Forest Stewardship Council - an organization that works internationally for environmental certification of ecologically, economically and socially sustainable forestry.

GWH

Gigawatt hour - an energy unit corresponding to one million kWh (kilowatt hours).

GWP100

The GWP factor indicates how much effect a gas has on the climate compared with carbon dioxide. One kg of carbon dioxide corresponds to 1 GWP. This is calculated on a 100-year perspective, which means for instance that biofuel does not add any carbon dioxide. The hydrocarbons subject to restriction under the Kyoto protocol (various forms of HFC) have GWP values between 120 and 12 000, depending on their absorption of radiation and atmospheric lifetime.

HDF

High Density Fibreboard. Material used in the core of Linnea floors.

LNU

Linnaeus University

M1

A Finnish classification system aiming to promote the development of building materials with minimal environmental impact. The system shows recommended materials, for example in the construction of regular office and residential environments. M1 stands for a low degree of emissions and low odour.

MIFO

Methodology for the Inventory of Contaminated Areas. Phase 1 includes interviews and compilation of historical documents. Phase 2 includes sampling and analysis at critical locations.

MWH

Megawatt hours Megawatt hour - an energy unit = thousand kWh (kilowatt hours).

NITROGEN OXIDES (NOX)

A group of gases composed of nitrogen and oxygen, formed during combustion. In moist air, nitrogen oxides are converted into nitric acid, which falls as acid rain. Nitrogen oxide emissions also have a fertilising effect.

NATIONAL ENV. OBJECTIVES

Sweden has 16 national environmental objectives. Read more on the Swedish Environmental Protection Agency's website:

PDCA

Is short for Plan, Do, Check, Act and is a scheme in quality management for systematic im-

provement.

PEFC

The Programme for the Endorsement of Forest Certification. An international non-profit, non-governmental organization promoting sustainable forest management around the world and tracking of timber from certified forests through the processing & trading chain.

RENEWABLE

When a resource is used up more slowly than it is regenerated. Examples are water, wood and various biomass products. Non-renewable means something that is depleted faster than it is regenerated, e.g. products based on fossil oil, such as diesel or plastics.

RESPONSIBLE FORESTRY

Wood material that comes from suppliers who can show verification that the forest of origin is managed in a sustainable manner. Examples of verification are FSC, PEFC, documented origin, underwater sawing.

SDG

Sustainable Development Goals

SUNDA HUS

In SundaHus Miljödata (literally, Healthy buildings, Environmental data) you can search for thousands of assessed products. The assessments are based on various characteristics and are divided into five classes. A, B, C+, C- and D. sundahus.se

SULPHUR DIOXIDE (SO₂)

A gas that is formed when fossil fuel is burned, and the sulphur in the fuel is oxidized by atmospheric oxygen. In contact with humid air sulphur dioxide is gradually converted into sulphuric acid, which contributes to acidification.

TANNINS

Also known as tannins and polyphenols which are found in oak wood, coffee, tea and red grapes.

THE LACEY ACT

A US law that prohibits trade in protected species. The law was amended in 2008 to include plants and plant products such as timber and paper. It was the first legislation in the world to prohibit trade in illegally produced wooden products.

TONNE-KM

Tonne-kilometres Unit of transport work performed. It is calculated as the number of tonnes transported multiplied by the number of kilometres.

TRIPLE HELIX COOPERATION

Interactions between the academic, industrial and institutional systems as a means to foster technological innovation and economic growth.

UV-LACQUER

Lacquer that is quickly cured by exposure to ultraviolet (UV) light.

VOC

Volatile Organic Compounds. A collective designation for organic compounds (solvents) primarily consisting of carbon, hydrogen and oxygen. VOCs contribute to the formation of ozone close to the soil.

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