

KUUSAKOSKI

ANNUAL REPORT 2021

Energy

AFTER RECYCLING THE BEST PIECES

ENERGY & WASTE BUSINESS MAKES SURE
EVERYTHING FINDS ITS PLACE

SMALL FOOTPRINT

LARGE HANDPRINT. HOW IS IT
POSSIBLE IN PRACTICE?

ELECTRIFYING THE WORLD

OUR ALUMINIUM FOUNDRIES DO THEIR PART
AND PROMOTE ENERGY EFFICIENCY



 **RESTORING VALUE**





Water Earth Air

Concrete action is needed to save the environment we all share. As recycling professionals, we are actively curbing climate change, as using recycled materials significantly saves both nature and energy. We restore the value of waste materials by refining them into new, valuable raw materials.

In 2021, Kuusakoski's operations reduced globally emissions by 1.49 million tonnes of CO₂e. This corresponds to the annual emissions of around

600,000

passenger cars.



10 ENERGY & WASTE BUSINESS
SHREDS, SEPARATES AND SORTS



40 SMALL CARBON FOOTPRINT, LARGE
HANDPRINT – SUSTAINABILITY AT THE
HEART OF OUR STRATEGY



28
Aluminium from the
first Airbus aircraft to
be recycled in Finland
saves 55 passenger
cars worth of CO²
emissions.

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Kuusakoski Group comprises the recycling company Kuusakoski Oy, the foundry company Alteams Oy, and the property companies Jokirantakiinteistöt Oy and Kiinteistö Oy Lahden Norokatu 5. The parent company of Kuusakoski Group is Kuusakoski Group Oy, which is owned in its entirety by the Kuusakoski family.

KUUSAKOSKI ANNUAL REPORT
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Dear Reader

You are holding in your hands the 2021 annual report for the Kuusakoski Group. It contains both the traditional thematic section and the annual review of the Group's recycling and foundry operations. I hope you enjoy it!

Ever since day one, Kuusakoski's business model has been based on sustainable development. Although there was no talk of the circular economy back in 1914, in practice we have been providing circular economy solutions to our customers for over a hundred years. The owners of the family business have insisted that we serve as a responsible pioneer in our industry and a provider of future solutions.

Kuusakoski Group enjoyed a year of strong development and growth in 2021. In fact, it was one of the most successful years in our history, both financially and operationally. Our customer-oriented strategy proved its true strength. We are close to our customers and have shown that we are able to listen to them and serve them even in challenging conditions. The global corona pandemic that began in 2020 continued to have a clear impact on final demand, supply chains and metal prices. Higher global market prices created a headwind that was translated into excellent results through operational reliability and successful supply chain management

Sustainability is a long-term success factor and a cornerstone of competitiveness. Concerns about climate change, as well as the supply of resources and energy, further highlighted the need for sustainable development solutions. For example, the electrification of society progressed rapidly. This

increased demand for both recycled metals and the components needed for electrification and reducing energy consumption. We believe this strong trend, in which the circular economy is enabling sustainable economic growth, will continue to intensify in the coming years.

The significant investments we have made over the decades in the skills of our employees, R&D and processes have made us a pioneer in recycling and foundry operations. In the future, the purity and quality of recycled materials will be further emphasised. This requires close collaboration throughout the value chain. Kuusakoski is focused on continuing our sustainability work and committed to developing better recycling solutions and products together with customers.

Finally, I would like to warmly thank our customers, employees and other stakeholders for your successful cooperation and welcome you to continue sharing our success story in the circular economy.

Johan Kronberg
Chairman of the Board
Kuusakoski Group Oy



In this year's thematic section, we present Kuusakoski's Energy & Waste business. In the previous two years, we looked at vehicle recycling and the recycling of waste electrical and electronic equipment. We hope you enjoy our new, magazine-like format!



RECYCLING BUSINESS PREPARED FOR GROWING DEMAND

DEMAND FOR RECYCLED RAW MATERIALS IS EXPECTED TO GROW SIGNIFICANTLY THIS DECADE.

We at Kuusakoski went into 2021 with a positive outlook, and the overall result posted by the recycling business exceeded even our expectations. The second year in a row of the exceptional circumstances caused by the corona pandemic already led us to believe that things could only get better – although the new variants of the virus also caused further uncertainty about the future.

During the year under review, we systematically implemented our customer strategy. Each of our country units performed excellently throughout the difficult year. The corona crisis impacted some country units more severely than others, but as a whole we were able to take significant steps forward in terms of developing our operational efficiency, productisation and sourcing. I am certainly proud of how our entire personnel has performed over the past year!

Responsible business, reducing emissions and sustainable development in general were brought to the fore in various industries during the year. We expect these trends to be reflected in the changing needs of our customers in the coming years. We have invested in internal processes and resources so that we can continue to provide an even better service and customer experience for our customers. Demand for recycled raw materials is expected to grow significantly this decade. We will continue to invest in productisation, expertise and improving productivity in order to ensure our competitiveness also in the future.

Mikko Kuusilehto
CEO
Kuusakoski Recycling



FOUNDRY BUSINESS AT THE HEART OF SUSTAINABLE DEVELOPMENT

Alteams enjoyed a year of growth in 2021. Our profitable Chinese unit was in a class of its own – demand there was the highest it has been in eight years. The strong result was mainly due to the increasing construction of 5G networks as the corona pandemic eased. I am proud of our organisation, which demonstrated its ability to respond to the rapid growth in demand.

Growth was more moderate in Poland and Finland, but the outlook remains positive. Poland's strategic importance to the organisation continued to grow as the "Made outside China" trend intensified. In India, we posted our best result ever in April. Although the situation subsequently deteriorated due to corona, the strong economic growth was reflected in our operations around the end of the year.

The sharp rise in aluminium prices towards the end of the year created pressures, as did rising logistics and energy costs. Through successful negotiations, we were able to share the cost pressures caused by the price increases with our customers – we thank you for your good cooperation.

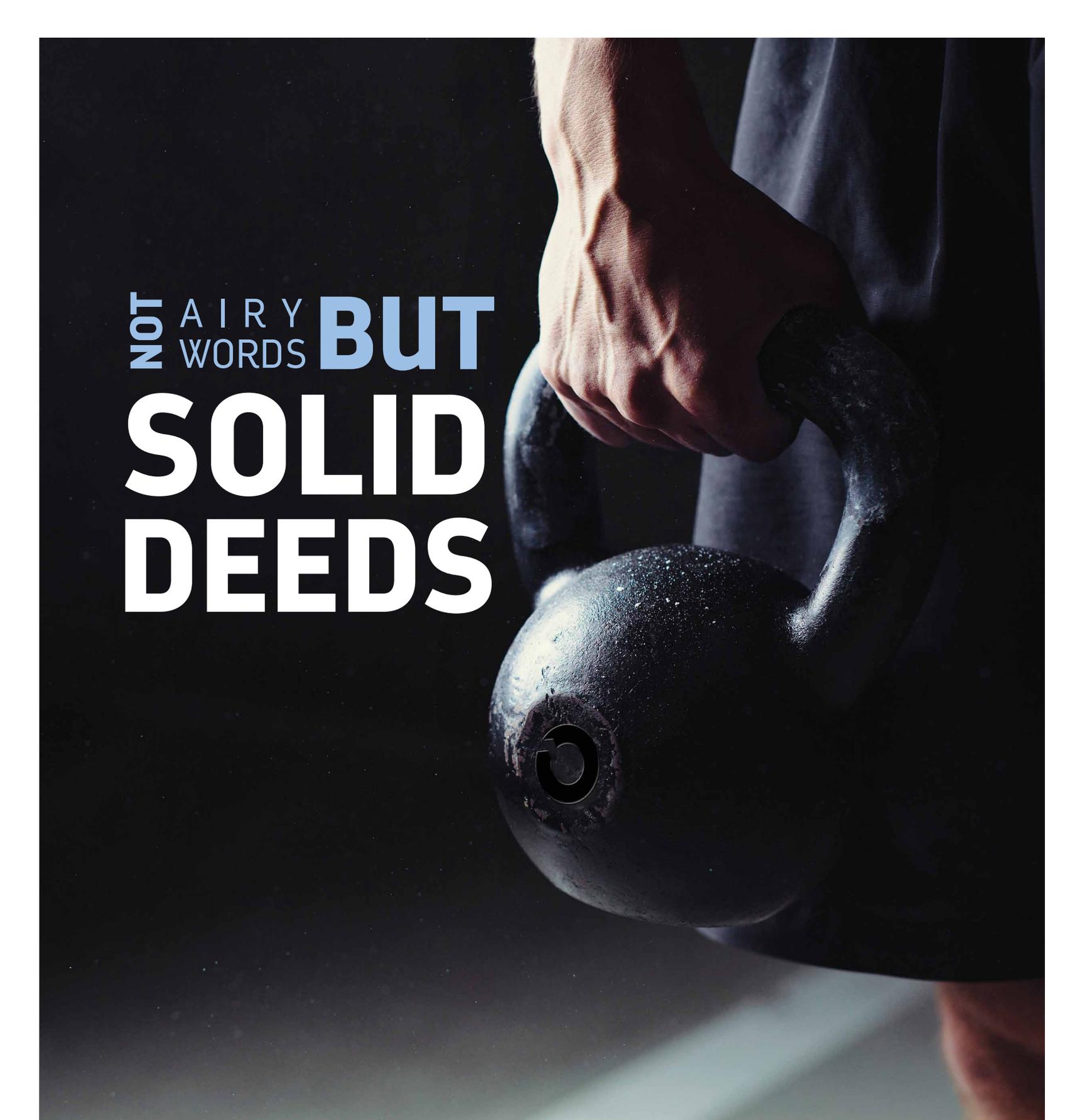
Alteams is at the heart of sustainable development. Most of the products we manufacture are related to the electrification of society or the reduction of energy use. These include components for electric vehicles, 5G base stations and frequency converters that reduce the need for electricity in processes. Not only are the latest 5G networks improving communication systems, but the energy consumption of 5G base stations is also a fraction of the consumption of 4G networks.

The investments we have made in recent years in restructuring and modernising our machinery can clearly be seen. Our strong expertise in sustainability products, global presence and agile organisation ensure that we are more prepared than ever to meet the needs of our customers.

Asko Nevala
CEO
Alteams Oy

I AM PROUD OF OUR ORGANISATION, WHICH DEMONSTRATED ITS ABILITY TO RESPOND TO THE RAPID GROWTH IN DEMAND.





NOT AIRY **BUT**
WORDS **SOLID**
DEEDS

SUSTAINABILITY. FOR US, IT MEANS SOLID DEEDS, CONTINUOUS IMPROVEMENT AND A PASSIONATE APPROACH TO RECYCLING. WITH OVER A HUNDRED YEARS AS A FAMILY BUSINESS AND AS THE LEADING RECYCLING COMPANY IN NORTHERN EUROPE, WE LET OUR ACTIONS SPEAK FOR THEMSELVES.

It is not enough for us to comply with legal requirements and norms – we demand more from ourselves and everything we do. We want to be part of the solution and enable our customers to conduct more responsible business.





Jess Nakielska and Fraser Daniels as Kuusakoski ambassadors!

EMPLOYEES IN FRONT OF AND BEHIND THE CAMERA

Brexit combined with the impact of the corona crisis have posed a challenge to **SWEEP Kuusakoski** in terms of achieving full staffing numbers. Employees got involved by filming videos to show the variety of job roles and career progression opportunities available at SWEEP Kuusakoski. **Adrian Baluse** and **Dzintars Granapskis** were responsible for directing, filming, voice over and editing, while **Jess Nakielska** and **Fraser Daniels** turned into presenters for the day by being filmed giving a guided tour and outline of their own career progressions. The film team hopes that the enthusiasm captured on the video will raise interest in SWEEP Kuusakoski and attract job seekers.



Everything in Order

On Single Emergency Number Day, 11 February 2021, we launched the **Everything in Order** ("Kaikki Kunnossa") campaign for Finnish employees in support of occupational safety and wellbeing activities. The aim of this long-term campaign is to strengthen the commitment of employees to improving occupational safety, wellbeing at work and work capacity. At the heart of the campaign is a team of Carers comprising motivated and enthusiastic employees who themselves applied for the role.



ELECTRONIC WASTE CAMPAIGN INTERESTS PEOPLE OF ALL AGES

Kuusakoski organised for the first time in Estonia a national campaign to collect old electronic devices. The main target groups were schools and kindergartens, but all Estonians were encouraged to participate. In three months, over 3000 people contributed to collecting thousands of electronic devices that were no longer usable, such as laptops, mobile phones, wires and other small devices. The youngest participants were under the age of two, while the oldest was 82 years old. A prize drawing took place among all participants for 1000 euros worth of new electronic devices. In addition, selected participants were invited to join in an exclusive virtual concert with local pop artist Gameboy Tetris.



LAST STOP FOR METRO CARS

Having covered four million kilometres over the past 44 years, five metro cars made their last stop at Kuusakoski’s recycling centre in Vantaa, Finland. Our long-term customer, **Helsinki Region Transport (HSL)**, sent the end-of-life metro cars to our recycling process once all the technical components suitable for reuse had been recovered. In addition to their aluminium frame, the three-metre-wide cars contain

composite materials for which we also have a solution. These can be used in the production of cement in a parallel process that combines energy recovery with material recycling. The journey of these metro cars continued as recycled raw materials and energy, enabling more than 90% of their materials to be reutilised.



MAJOR INVESTMENT IN PROCESSING CABLES

In January 2021, new machinery and equipment worth 800,000 euros was commissioned at the Heinola plant in Finland to significantly improve the efficiency of handling recycled electric cables and separating materials. In the new process, the cables are crushed and granulated into the smallest possible particles. In this way, aluminium, copper and plastic can be sorted into separate products that can then be sold on to end customers.



SATISFIED KUUSAKOSKI EMPLOYEES

We regularly monitor employee satisfaction at Kuusakoski, and based on the latest results, we continue to improve on both the organisational and team levels. The response rate to the employee survey conducted in Finland at the end of the year was 77% (2019: 74%). The average rating for the claims presented in the survey on a scale of 1 to 5 was 4, which is an excellent result. Employees clearly feel that meaningful work is being done in our company (average 4.7), that it is easy to work with their immediate supervisors (average 4.5)

and that their health will allow them to continue working in their current position after two years (average 4.6).

Areas that could be improved include planning the working day in advance and focusing on one thing at a time. When asked how likely they would recommend Kuusakoski as an employer to a friend or colleague, the response was an excellent 36 (excellent over 20, top score over 40). This rating reflects, in particular, the excellent satisfaction, dedication, loyalty and commitment to the organisation among Kuusakoski’s employees.



**ENERGY & WASTE BUSINESS
(E&W)**



**CONSTRUCTION
WASTE PROCESSING**



**TYRE RECYCLING
SERVICE**



SERVICE BUSINESS



FINAL DISPOSAL

A close-up photograph of a person's hand holding a small pile of shredded waste material, including pieces of paper, plastic, and organic matter. The hand is positioned in the center-left of the frame. The background is a bright, vibrant green, which is the color of a high-visibility safety vest worn by the person. The lighting is bright, highlighting the textures of the waste and the skin of the hand.

The end product of Ekopark Lahti's waste processing line is solid recovered fuel containing various non-recyclable, combustible waste fractions.

FROM WASTE TO

ENERGY

A PASSION FOR RECYCLING DRIVES KUUSAKOSKI'S PROFESSIONALS TO SEEK AND FIND VALUE IN NEW AND CHALLENGING MATERIALS. ONE OF THE GROUP'S MAIN BUSINESS AREAS IS ENERGY AND WASTE, WHOSE IMPORTANT WORK MAXIMISES ENERGY RECOVERY AND MINIMISES THE NEED FOR FINAL DISPOSAL.

Considering that Kuusakoski is over a hundred years old, Energy & Waste (E&W) is a relatively new business area for the company, even though it has been an important part of our service offerings for more than 20 years. Today, E&W operations cover construction waste processing, tyre recycling, the service business and final disposal in Finland. At the heart of all these operations is the production and sale of solid recovered fuel (SRF), as well as associated power plant agreements.



EKOPARK LAHTI WAS INAUGURATED ON 26 NOVEMBER 2012 AND WILL CELEBRATE ITS 10th ANNIVERSARY THIS AUTUMN. IN THAT TIME, IT HAS PRODUCED OVER 500,000 TONNES OF SOLID RECOVERED FUEL.

Timo Kämppi, head of the Energy & Waste business, makes sure that local residents in Lahti will have enough heat also for the next ten years.

The E&W business has grown significantly over the years. The original spark was ignited in the early 2000s when Kuusakoski became a partner in Rakentäjien Ekopark. The joint venture focused on the processing of construction and demolition waste.

"After a few years, we at Kuusakoski wanted to expand our construction and demolition waste processing operations. After searching for a suitable building and location, we found what we were looking for in Lahti," says **Timo Kämppi**, head of Kuusakoski's E&W business.

Unique industrial symbiosis

Construction of the modern Ekopark Lahti recycling plant, Kuusakoski's biggest investment in ten years, was completed in 2012. Built next to a new gasification power plant, the recycling plant

was designed with the needs of its operator, Lahti Energy, in mind. When it was commissioned in 2012, Kymijärvi II was the world's first gasification power plant to use only waste-based solid recovered fuel.

"The two new plants created a unique industrial symbiosis. Once all valuable materials have been separated from construction and demolition waste, what remains is waste that can be used for solid recovered fuel. This is then used by Lahti Energy's SRF gasification power plant to generate heat and power for local residents," Kämppi explains.

Ekopark Lahti, which turns 10 this year, mainly processes construction and demolition waste collected from Southern Finland. This waste is then used to produce high-quality solid recovered fuel for multiple power plants, although Lahti Energy's

adjacent gasification power plant remains one of its most important customers. The power plant has been fed by a direct line from Ekopark Lahti ever since the two plants were commissioned ten years ago.

Advanced fuel analytics

Ekopark Lahti serves as the base for Kuusakoski's E&W operations and also houses the Kuusakoski Research Centre, the activities of which support the recycling business. Its areas of expertise are focused especially on metal and fuel analytics. Since spring 2021, the Kuusakoski Research Centre has been certified by the Finnish Accreditation Service as a fuel testing laboratory. Batches of solid recovered fuel produced at both Ekopark Lahti and the Heinola reject plant are monitored by regular sampling. Laboratory analyses conduct-



ed at the Kuusakoski Research Centre monitor the quality and calorific values of the fuel. This enables the optimal SRF mix to be prepared for the equipment used at different power plants.

“The quality and professionalism of our operations are backed up by the passion of our highly skilled and experienced employees,” Kämppi summarises.

Ekopark Lahti will continue to feed Lahti Energy’s gasification power plant with solid

recovered fuel also in the future, as Lahti – already a pioneer in climate-friendly district heating – plans to be carbon neutral by 2025. In 2021, Lahti became the first city in Finland to be named a European Green Capital by the European

Commission. Guided tours of the Ekopark Lahti plant were planned but had to be cancelled due to Covid restrictions. Instead, the operations of the recycling plant can now be viewed virtually on the Kuusakoski website.

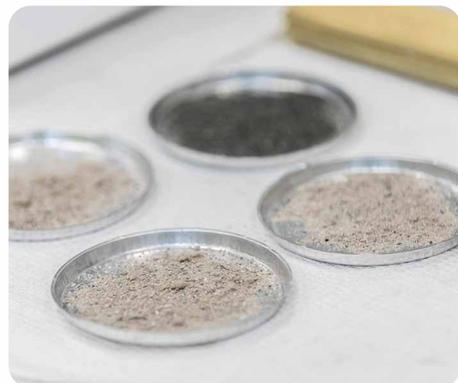
Change is an opportunity

Kuusakoski’s E&W business offers a wide range of material processing services, from crushing to screening and sorting. An important part of the service is provided by Kuusakoski subsidiary Kivikolmio Oy, which uses its mobile machinery to crush concrete and asphalt mainly at customer sites across Finland.



TAKE A VIRTUAL
TOUR OF
EKOPARK LAHTI!

Scan the QR code >



Kuusakoski takes over 900 samples of recycled materials a year, from which thousands of analyses are conducted. Read more about laboratory activities on page 22.

“Our services are tailored to the specific needs of each customer, and we are always keen to develop new solutions. As a manufacturer of solid recovered fuel, we are also able to offer an energy recovery solution for non-recyclable waste,” Kämppi adds.

The passionate attitude towards recycling and solid expertise in materials are also evident in the search for new recycling opportunities. One

>> p. 15

RECYCLING SOLUTIONS FOR INDUSTRIAL COMPOSITE WASTE

LIGHTWEIGHT, STRONG AND DURABLE PLASTIC COMPOSITES ARE CONTINUOUSLY GROWING IN POPULARITY AS A RAW MATERIAL. RECYCLING INDUSTRIAL COMPOSITE WASTE, HOWEVER, POSES A CHALLENGE TO ALL OF SOCIETY. TO MEET THIS CHALLENGE, THE KIMURA PROJECT WAS LAUNCHED IN JANUARY 2021.

Finland produces numerous composite products, and Finnish industry is keen to ensure that they are recycled at the end of their life cycle. **The KiMuRa project** is an initiative by the Finnish Plastics Industries Federation, the Ministry of the Environment and seven composite industry companies. Together with recycling expert Kuusakoski and Finnsementti, which represents end users in the cement industry, the project partners are seeking technically viable collection logistics and an economically viable recycling process for industrial composite waste. The name of the project stands for the Finnish words **"Kierrätetty Murskattu Raaka-aine"** (Recycled Crushed Raw Material).

In 2021, a circular economy model for composites products was formulated and piloted, including all the necessary sorting arrangements by the companies themselves and recycling logistics at Kuusakoski's collection points. As the recycling operator for the project, Kuusakoski has planned and implemented the crushing and storage solutions.

The composite waste is being supplied as a raw material to Finnsementti. The crushed composite material is utilised in a parallel process of cement production, where it can be efficiently utilised without residual ash. The structural waste, in turn, is used as a raw material in the production of clinker, an intermediary product in cement production. The use of composite materials in cement production significantly reduces CO₂ emissions.

"One interesting example of composite waste is windmill blades. Through this project, Kuusakoski can offer a completely domestic solution for recycling them," says **Anu Söderena**, Material Manager at Kuusakoski Recycling.

Kuusakoski and Finnsementti have signed an agreement for the delivery of a significant quantity of crushed composite material from 2022 onwards. The KiMuRa project is set to continue until autumn 2022, but the partners are looking to continue their cooperation beyond the pilot project. •

In addition to Kuusakoski, the partners in the KiMuRa project include Ekin Muovi Oy, Exel Composites Oyj, Fenix Marin Oy, Muovilami Oy, Muovityö Hiltunen Oy, NCE Oy and Patria Aerostructures Oy together with Finnboat ry and the Finnish Wind Power Association as representatives of producers of EOL waste.

Material Manager Anu Söderena is excited about the new business opportunities presented by the KiMuRa project.

major initiative is related to composite materials, the recycling of which is also in the interest of society.

“At Kuusakoski, we adapt constantly to our changing operating environment. We are now involved in the KiMuRa composites recycling project, where we are building a new success story for processing composite materials. In addition to the wind turbines that have been the subject of the research, the results also serve the plastics and marine industries, as well as the recycling needs of other means of transport,” says Timo Kämppi.

Reject plant minimises waste streams

Even the most efficient recycling process can generate waste streams in the form of reject that must be sent for final disposal. In response to this challenge, Kuusakoski’s E&W service business includes processing at the Heinola reject plant, which minimises the amount of the reject.

“When our reject plant started up at the beginning of 2020, a new phase was added to the recycling process at our facilities in Heinola. Now, reject is a raw material for Kuusakoski, not waste. The reject plant further processes waste streams from recycling processes that still contain valuable metals. These are recovered using precision separation equipment,” says Kämppi.

During processing, the waste stream is converted into carefully analysed solid recovered fuel, which is an excellent source of energy due to its high calorific value.

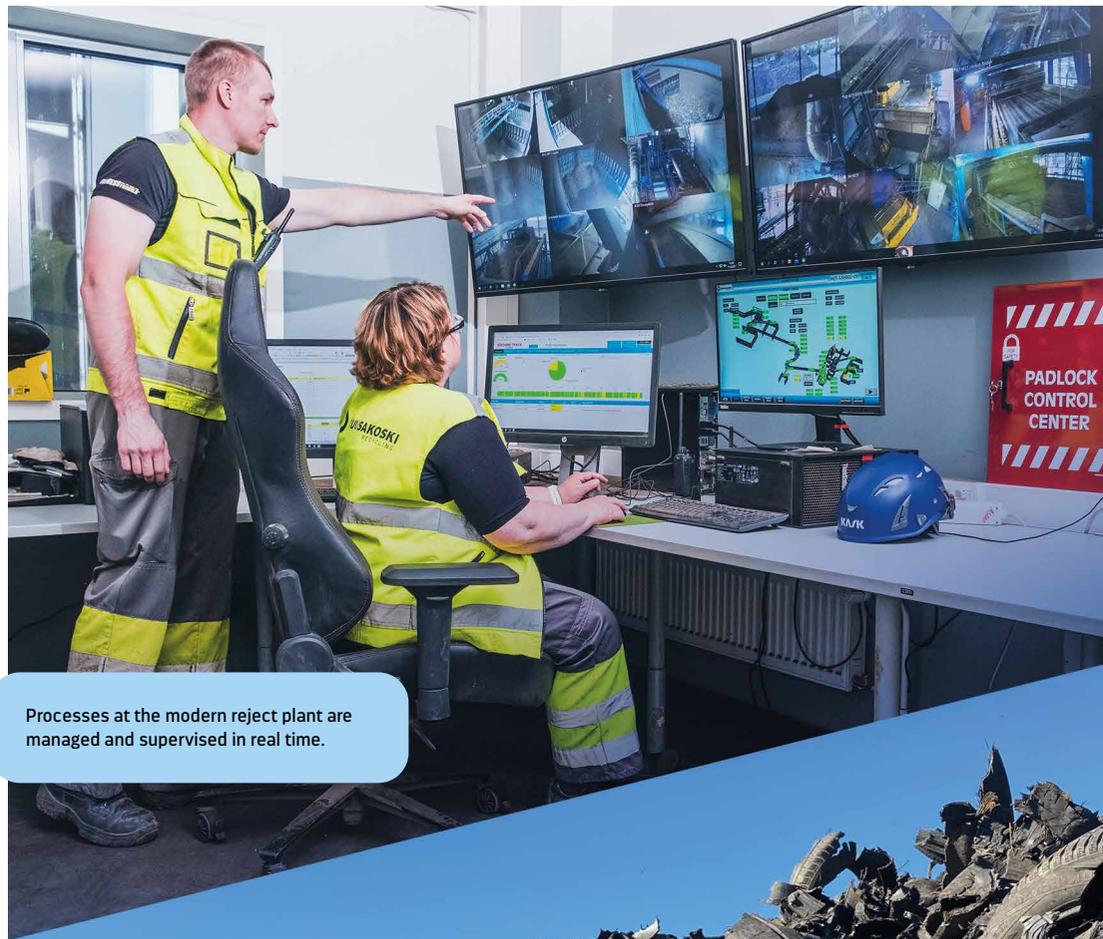
“Processed reject can be recovered as energy at waste-to-energy power plants, while ensuring that harmful compounds do not continue to circulate.”

The Heinola reject plant currently processes mainly Kuusakoski’s own material flows, such as residual materials from car shredders. However, the plant is also designed to handle a variety of other metal-containing fractions and is ready to process materials also from partners. Based on analyses of material flows at the reject plant, operations were fine-tuned in 2021 to make them even more efficient.

60,000 tonnes of tyres

Kuusakoski has been the recycling partner of Finnish Tyre Recycling Ltd continuously since 2007 and has had a significant input into the development of tyre recycling in Finland during this time.

“We collect and dispose of end-of-life tyres throughout Finland. Together with Finnish Tyre Recycling Ltd, we have succeeded in making the Finnish producer responsibility system one of the most efficient in the world,” says Kämppi.



Processes at the modern reject plant are managed and supervised in real time.



AT LEAST

95%

OF THE TYRES PLACED ON THE MARKET MUST BE RECOVERED EACH YEAR.

Finnish Government Decree on the separate collection and recovery of discarded tyres (527/2013).

Although only a few key people are at the heart of operations at Kuusakoski, the reliability of operations is backed up by dozens of transport entrepreneurs who carry more than 60,000 tonnes of tyres for recycling each year. Altogether, Kuusakoski has collected approximately one million tonnes of tyres since 2007. Kuusa-

koski supplies its customers with complete tyres, tyre shred in various sizes, and tyre granulate and powder. Shredded tyres are used, for example, in civil engineering, and they are also used to replace virgin aggregates in the surface structures at Kuusakoski’s own disposal areas.



RECYCLING TERMINOLOGY

EOL (End-of-Life)

An object or material that has reached the end of its life cycle.

CONSTRUCTION WASTE

Waste generated during construction and demolition consisting mainly of stone- and wood-based materials but that may also include metals, insulation, plastics, glass and ceramics, for example.

SRF (Solid Recovered Fuel)

High-quality fuel with excellent calorific value produced from side streams that are not suitable for reuse as industrial materials.

REJECT (downstream waste)

Waste stream from a recycling process that can no longer be recovered in that process.

COMPOSITE MATERIAL

A combination of two or more materials that enhance each other's properties. The materials are bonded together but have not dissolved or fused to each other. One of the most common composite structures is plastic composite, the most common of which are fiberglass and carbon fibre reinforced plastics.

Total service from start to finish

Despite increasingly efficient recycling processes, a small proportion will always be unrecyclable waste. Nevertheless, Kuusakoski is able to offer its customers a complete recycling service thanks to its two ISO 14001-certified final disposal sites in Finland. Both final disposal sites meet strict environmental requirements, and their condition is monitored regularly.

"Our Energy & Waste business takes care of recycled materials from start to finish. Thanks to our own disposal areas, we at Kuusakoski can guarantee our customers responsible waste processing, also for waste that is not suitable for recovery," Kämppi promises.

At our responsibly managed final disposal sites, thoughts easily drift away from heavy industrial recycling activities. At Rajavuori in Heinola, there is even a popular birdwatching tower, from the heights of which it is easy to observe not only the birds but also the surrounding nature tens of kilometres away. •



**WATCH A VIDEO
ABOUT HOW A
RESPONSIBLE FINAL
DISPOSAL SITE
OPERATES**



Kuusakoski's final disposal site at Rajavuori in Heinola meets strict environmental requirements and is a masterpiece of civil engineering. The environment is protected by multiple layers of insulation and filtration. A popular birdwatching tower is also situated at the highest point of the landscaped area.

Follow your own path!

A summer evening in 1994

Two boys pedal their bikes up a steep hill. When they get to the top, they continue along a short section of road and then turn right. Ahead of them lies their destination. Another adventure is in store, as they are on their way to the local landfill for a treasure hunt.

When they get to the landfill, they greet familiar scrap collectors looking for valuable metals, such as copper and brass. The men also carry large rolls of twisted electrical wires on their bicycles, which they will efficiently strip or burn clean before selling the remaining metals to a scrap yard.

The boys sometimes tell the men about the metal treasures they find, but they themselves are not looking for anything particular. They are content just to explore the old landfill to see what might be hiding in there. This time they discover an old Wiima bus, which has been crammed full of items from a farm clearance. VCRs, stereos, clothes, newspapers and magazines... The boys spend an hour or two marvelling at everything they find.

A spring afternoon in 1999

Two young men are once again pedaling their bikes up the same steep hill. At the top, they find the same familiar section of road, but what awaits them after that is something new. A fancy waste treatment centre has opened next to the old landfill, which has been closed. The two men have decided to go there to enquire about summer jobs.

They get the jobs, and summer passes quickly sorting through energy waste. They become familiar with the orange bags and their contents,



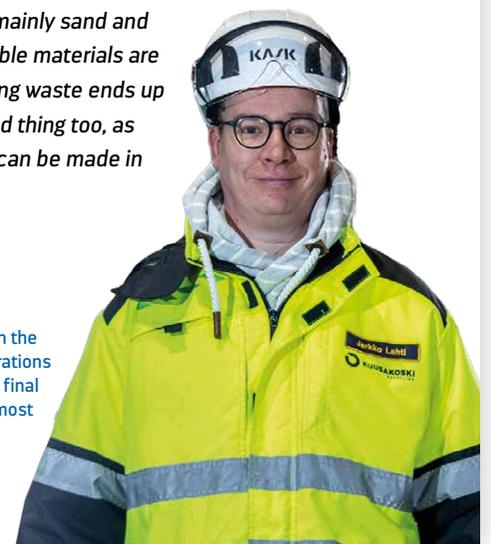
and while learning something new is fun, recycling is not always easy. When handling the slimy bags, the boys often have to comfort each other with the thought of pay and the fact that this is just a one-off summer job.

A winter day in 2021

It turned out differently, of course. As one of the boys engaged with circular economy through his hobby of collecting things, the other entered the recycling industry to stay. He has had a front-row seat over the past twenty years observing how recycling and the circular economy have taken huge strides forward. Whereas before everything from oily rags to buses ended up in landfills, the landfill at the modern disposal site is now mainly sand and other fine materials. All valuable materials are recovered before the remaining waste ends up being dumped. And it is a good thing too, as nowadays these discoveries can be made in flea markets and online. •

JARKKO LAHTI

The author is one of the two boys in the story, who went on to become operations manager at Kuusakoski's Rajavuori final disposal site. Pay is no longer the most important aspect of his job, but of course it is nice bonus!



TYRE SHRED

LIGHTENS NOISE BARRIERS

EACH YEAR, APPROXIMATELY 60,000 TONNES OF END-OF-LIFE TYRES ARE DELIVERED TO KUUSAKOSKI FOR PROCESSING. A TYPICAL APPLICATION FOR RECYCLED TYRES IS CIVIL ENGINEERING, WHERE TYRES CUT TO DIFFERENT SIZES CAN REPLACE VARIOUS GROUND MATERIALS. KREATE, ONE OF THE LEADING INFRASTRUCTURE BUILDERS IN FINLAND, USES TYRE SHRED SUPPLIED BY KUUSAKOSKI TO BUILD NOISE BARRIERS.

Kuusakoski and Kreate signing an agreement in July 2021, and a couple of months later the first loads of tyre shred were delivered from Kuusakoski. This is how our cooperation with Kreate in the E18 Turku Ring Road project started.

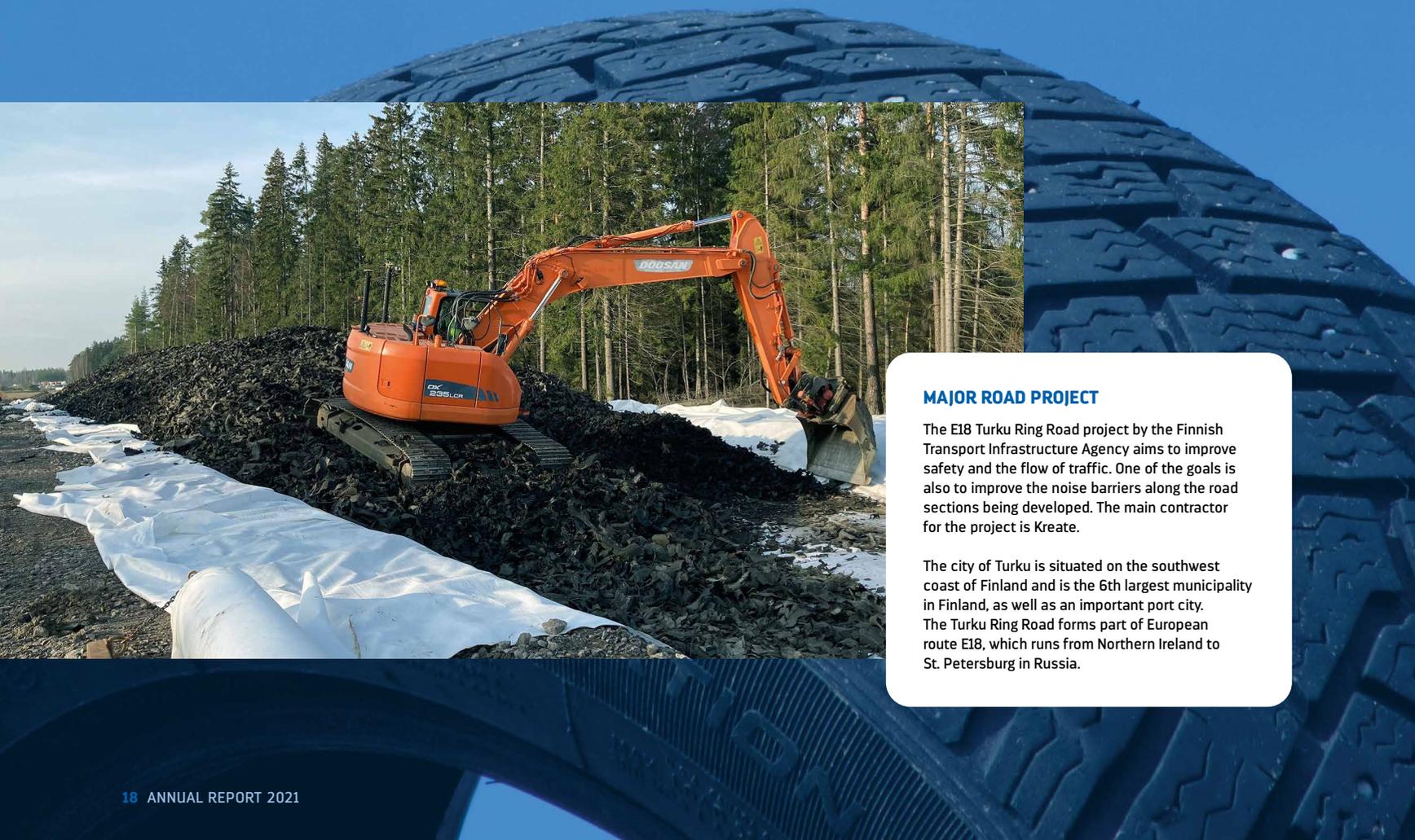
In the autumn of 2021, we delivered a total of approximately 4500 tonnes of tyre shred for two noise barriers for the project. The delivered tyre shred was of the quality RL 1, meaning it was cut once. The tyre shred was produced at several of our tyre terminals in Southern Finland. The cooperation is continuing in 2022, when we will deliver tyre shred for a third noise barrier.

The use of recycled tyre materials in road construction, and especially in noise barriers, has become increasingly common in recent years. Due to

their low cubic weight, recycled tyre materials are suitable for applications where the load-bearing capacity of the ground is low. Because of its low weight, tyre shred was selected also for the noise barriers along the Turku Ring Road.

“Our cooperation with Kuusakoski so far has been excellent. At the hectic construction site, Kuusakoski’s flexibility in terms of delivery schedules and quantities has been especially appreciated,” says **Andrey Rojas**, Project Manager at Kreate.

“We at Kreate want to do our part to promote the circular economy in infrastructure construction. Using recycled materials is one concrete way of doing this, so our cooperation with Kuusakoski will certainly continue in the future.”



MAJOR ROAD PROJECT

The E18 Turku Ring Road project by the Finnish Transport Infrastructure Agency aims to improve safety and the flow of traffic. One of the goals is also to improve the noise barriers along the road sections being developed. The main contractor for the project is Kreate.

The city of Turku is situated on the southwest coast of Finland and is the 6th largest municipality in Finland, as well as an important port city. The Turku Ring Road forms part of European route E18, which runs from Northern Ireland to St. Petersburg in Russia.

NEW ASPHALT IS PRODUCED USING

20–30 %

OLD ASPHALT MILLINGS, WHICH REDUCES THE NEED FOR NEW AGGREGATE AND PITCH.

CRUSHING DAY AT THE ASPHALT STATION

KIVIKOLMIO'S MOBILE CRUSHING STATION CAN GO WHEREVER IT IS NEEDED. ONE JOB TOOK IT FROM RASIO TO YLÖJÄRVI TO CRUSH ASPHALT FOR USE AS A RECYCLED MATERIAL.

KIVI  **KOLMIO**
MEMBER OF KUUSAKOSKI

MILLION-TONNE CRUSHER

Founded in 1992, Kivikolmio Oy originally specialised in crushing concrete and became part of Kuusakoski in 2013. Today, Kivikolmio is Finland's largest company specialising in crushing recycled concrete and asphalt. The company's five crushers process 1,000,000 tonnes of asphalt and concrete annually.

5 Crushers: 2 x Hazemag, 2 x Metso and 1 x Kleeman equipped with magnet and separate screening unit. Some crushers are also equipped with a wind separator for removing small fractions.

The working day often starts as early as six in the morning, so Kivikolmio's team of 2-3 people usually move their mobile crushing station and other equipment to the site the day before. Depending on the location, their accommodation may be a caravan, a hotel or even a rental cottage.

The day begins with a morning inspection of the equipment: an excavator, a wheeled machine and sometimes a separate screen. This involves checking the oil levels, fluids and general condition, as well as starting the machines.

After a quick morning coffee, the day's work gets underway as the **excavator is driven onto the pile**. The driver of the excavator plays the key role in terms of crushing efficiency, and the operations of the crushing station also has to be monitored closely. This is facilitated by remote cameras, the screens of which are visible to the driver in the cab of the excavator. The main thing to keep an eye on is how the crusher is being fed. A conveyor returns pieces of asphalt that have not been crushed into small enough pieces to pass through the screens. For this reason, it is important to find the optimal amount for the excavator so that not too much new asphalt is fed to the crusher.

The total amount of returned and new piece of asphalt must be kept as large as possible without overloading the return conveyor. Sometimes, however, this happens. In this case, the crusher must be switched off and feeding must be

interrupted. In order to get the conveyor moving again, physical shovelling is required to remove the excess asphalt.

A driver of a wheeled machine works at the other end. He weighs the crushed asphalt that is piled under the conveyor and transports it to the customer's stockpile at a pre-arranged location. If the distance to the stockpile is more than 200 metres, the customer will handle the transport by truck or dump truck. In this case, the driver of the wheeled machine simply has to load the trucks.

In addition to crushing, the driver of the wheeled machine is also responsible for ordering fuel, supplying spare parts for the service container and refuelling the machines on the fly. These machines include the generator that provides electricity to the service and staff containers, the crusher and the wheeled machine. The excavator in turn is refuelled by the excavator driver at the end of the working day.

If the crushing station has a third employee, he will handle all the non-mechanical work. Since everyone can handle everything, breaks can be staggered so that the crusher does not have to be turned off. The excavator drivers change on the go, and the others continue the work while the original

driver takes a coffee break. After his break, he stands in for the driver of the wheeled machine during his break before returning to the controls of his excavator. The aim is to keep the crushing station running all the time so that production is not interrupted except for repairs and meals, when everyone takes a break at the same time.

The working day at the crushing station ends at around 6pm, at which time the excavator is refuelled and all machines are greased (unless they have automatic greasing). No job is complete until all the paperwork is done. Information that has to be recorded includes the number of tonnes crushed and weighed during the day, additional hourly work to be charged and any problems that may have occurred with the equipment. Once the machines and containers are locked, the team heads for its overnight accommodation – and usually every day is a sauna day!



Production Manager **Iivari Heikkilä** describes a typical workday.

SCULPTURAL FURNITURE FROM WEEE



CAN UNIQUE DESIGN FURNITURE ENCOURAGE PEOPLE TO RECYCLE ELECTRICAL AND ELECTRONIC EQUIPMENT?

A project launched at Aalto University in Finland in summer 2021 aims to design a furniture collection based exclusively on old and broken Apple computers. Kuusakoski is involved in enabling the artistic research project by supplying the necessary recycled materials. The resulting furniture is being designed and made by talented young artist **Erwin Laiho**, who works as a model builder at the Aalto Design Factory.

The aim of the project is to stimulate ideas about the value of raw materials used in electronics and the possibilities for reusing them. Aluminium furniture made from the frames and casings of end-of-life computers demonstrate how even broken equipment still has material value. In terms of sustainable development, the main motivation is to maintain a high level of material recycling and use it as such instead of consuming more energy to produce recycled raw materials.

The progress of the art project can be followed on Kuusakoski's LinkedIn page and Erwin Laiho's Instagram account [@erwinlaiho](#).

Butterfly effect

HOW TO COMBINE NOISE ABATEMENT WITH ENVIRONMENTAL PROTECTION?

One way is to construct noise barriers in an area that is home to endangered butterflies, as was done at Kuusakoski's Heinola plant. Such a small deed can have a great impact on wildlife preservation, as almost twenty endangered species of butterflies have been identified in Heinola for which suitable habitats with a sufficiently warm ground surface are no longer created naturally.

In spring 2021, in addition to the noise barriers, more than twenty butterfly-friendly plants were planted in a carefully maintained environment covering 10,000 square meters between the railway track and the highway.



Visual arts teacher **Taina Laakkonen** (left) and visual arts lecturer **Leena Valtonen** (right) present the new artworks together with art students **Mikko Laitinen** and **Kira Utela**.

ADDRESSING ENVIRONMENTAL CHALLENGES THROUGH ART

The European Green Capital 2021 project inspired a new kind of collaboration between Kuusakoski and the Kannas Upper Secondary School of Visual Arts in Lahti. Students created an army of insects made from recycled materials supplied by Kuusakoski as part of the "My Lahti" environment event, after which Kuusakoski commissioned art for its office premises in Lahti. The first artworks were unveiled in February 2022, and more are on the way.

"This kind of dialogue between the arts and the environment has been truly rewarding for us, and I think Kuusakoski is doing a really good thing by supporting it. This project is a fine example of how artistic activities can enhance awareness about environmental issues," says visual arts teacher **Taina Laakkonen**.

Kannas Upper Secondary School is one of six visual arts high schools in Finland and has 750 students. The school is participating in an international Erasmus project that is exploring ways in which art can be used to address environmental challenges.



TEAM OF CARERS

MAKING KUUSAKOSKI AN EVEN BETTER WORKPLACE

A NEW ERA OF CARING BEGAN AT KUUSAKOSKI ON 11 FEBRUARY 2021 WITH THE LAUNCH OF A NEW “EVERYTHING IN ORDER” OCCUPATIONAL SAFETY AND WELLBEING CAMPAIGN.

“The aim of the campaign is to strengthen the commitment of our employees here in Finland to improving occupational safety, wellbeing at work and work capacity,” says **Janne Haaksluoto**, QEHS & Sustainability Manager at Kuusakoski Recycling.

At the heart of the campaign is a Team of Carers who have been recruited among employees to help create a good work atmosphere and influence occupational safety and wellbeing. In addition to their motivation and enthusiasm, the only thing that is required from them is a few hours of their time a month.

Carers from different organisations

The Team of Carers comprises 11 employees representing different organisations and roles who meet monthly. This has increased their understanding of Kuusakoski’s operations and added perspective to their own work. The team members are Account Manager **Marko Thomson**, Service Advisor **Nea Kirjonen**, Research and Development Engineer **Walteri Leskinen**, Foreman **Mikko-Petteri Ahlfors**, Material Receiver **Joni Kangas**, Foreman **Juha Kivelä**, Account Manager **Ilpo Leppänen**, QEHS & Sustainability Manager

Janne Haaksluoto, HR Manager **Nina Perttula**, Communications Manager **Laura Oksanen** and Communications Officer **Minna Palotie**.

“I’m proud of our team. It takes courage and dedication to get involved in something you don’t really know anything about yet. We have been able to plan our activities together. The corona pandemic has inevitably created challenges in terms of getting together and implementing our activities in practice, but I think we have succeeded well considering the situation. Our goal for 2022 is to establish our activities at different locations and make them even more visible,” says **Nina Perttula**.



WHAT DO OUR CARERS THINK?

Our team is full of diamonds, and each member makes their own valuable contribution to the team. We really know how to get stuck in and see things through to the end. Everyone is really dedicated, and there is nothing that can't be discussed openly among team members. We are also allowed to go crazy and just be ourselves.

Nea Kirjonen

Participating in the team has given much more than it has taken, especially now during the corona pandemic. We've been able to discuss even serious matters with a smile on our faces.

Marko Thomson

The Team of Carers at their meeting in November (left to right): **Walteri Leskinen**, **Laura Oksanen**, **Juha Kivelä**, **Nina Perttula**, **Nea Kirjonen**, **Mikko-Petteri Ahlfors**, **Janne Haaksluoto**, **Ilpo Leppänen**, **Minna Palotie** and **Joni Kangas**. Missing from the photo is **Marko Thomson**.

SCIENCE

IS THE ARTFORM BEHIND OUR RECYCLING EXPERTISE

ONE OF KUUSAKOSKI'S KEY COMPETITIVE ADVANTAGES IS OUR OWN RESEARCH AND DEVELOPMENT, WHICH ENSURES HIGH-QUALITY RECYCLED RAW MATERIALS AND THE EFFICIENT RECOVERY OF MATERIALS. AN ESSENTIAL PART OF OUR R&D ORGANISATION IS THE KUUSAKOSKI RESEARCH CENTRE ESTABLISHED IN 2014 IN CONNECTION WITH EKOPARK LAHTI.

We take more than 900 samples of recycled materials each year, from which thousands of analyses are performed at our research centre. Most samples are from Kuusakoski's own operations, but services are also offered to our cooperation partners. In addition to analytics, the experts at the Kuusakoski Research Centre perform sampling and provide related advice.

Calorimeter in frequent use

Although it performs thousands of individual analyses each year, but the laboratory focuses primarily on metal and fuel analysis. The most widely used research method is ICP-OES (Inductively Coupled Plasma – Optical Emission Spectrometry), which is used to determine the metal composition of materials. In addition, fuel analysis techniques are an important part of day-to-day activities at the laboratory. One of the most important research methods is the calorific value determination of solid recovered fuel, for which a semi-automatic LECO AC600 calorimeter is



The workhorse of the laboratory is **ICP-OES**, which is used to determine the metal composition of materials. The results can be used to determine the prices of precious metal materials.

used. The calorific value describes the amount of thermal energy released from the fuel during complete combustion. To determine the calorific value, a sample pellet of about one gram of pressurised oxygen is burned in a combustion vessel, and the temperature change of the water added to the combustion vessel during combustion is monitored. It takes around 10 minutes to measure one sample.

Years of know-how backed up by the newest technology

Preparing samples involves various processing

and handling methods, such as crushing, dividing, screening, melting and grinding, that are used to prepare the test materials for laboratory analysis. The laboratory has over a dozen pieces of high-tech equipment, and one of the highlights of 2021 was the purchase of a new LECO CHN828 elemental analyser. This can be used to analyse the total carbon, hydrogen and nitrogen content of solid recovered fuels. The device's fully automated analysis process makes it possible to analyse a single sample in just 3 to 5 minutes.



Accreditation for fuel testing

In spring 2021, a two-year application process was successfully completed when the laboratory at the Kuusakoski Research Centre was granted accreditation for fuel testing. The accreditation decision was received on 9 March 2021, when the Research Centre officially became testing laboratory T353 as accredited by the Finnish Accreditation Service FINAS. Accordingly, the laboratory meets the requirements of the standard SFS-EN ISO / IEC 17025: 2017 regarding fuel testing. The accreditation means that customers, authorities and other actors in the field can count on receiving high-quality service and impartial, reliable research results from the Kuusakoski Research Centre. The accreditation is valid for four years at a time, and FINAS conducts an annual assessment visit to the laboratory to review its technical operations and management system. >>



Microwave digestion is used to pretreat samples before they are analysed.



Milli-Q equipment ensures that the water used in the analyses is ultrapure.



A **LECO CHN828** elemental analyser is the laboratory's latest acquisition and is used to analyse carbon, hydrogen and nitrogen levels in solid recovered fuels.



Ion Chromatography (IC) is used to analyse chlorine and sulphur in solid recovered fuels.

THE PROFESSIONALS BEHIND THE RESEARCH DATA

The Kuusakoski Research Centre employs five professionals, each of whom plays a vital role in our research work. Find out what roles they play in their lives outside the laboratory!

HOW CAN YOU
KNOW IF YOU DON'T
INVESTIGATE? WATCH
A VIDEO ABOUT OUR
RESEARCH CENTRE.



Sample Laboratory Assistant **Panu Parviainen** works mainly at the Heinola plant but also when needed in the laboratory at the Kuusakoski Research Centre in Lahti. Panu has held various positions within Kuusakoski over the past 30-plus years, the last seven of which in the R&D organisation. Panu takes care of sampling and tasks related to sample preparation. He lives in Heinola with his wife, two teenage daughters and dog. His favourite pastime is spending time at the cottage with his family.



Maria Lehtinen has been Laboratory Manager at the Kuusakoski Research Centre since 2014. Maria has Master of Science degrees in Environmental Technology and Analytical Chemistry, and she is also a laboratory technician. Altogether she has worked at Kuusakoski for 19 years, as she previously did laboratory work at our zinc product plant, aluminium smelter and precious metals department in Heinola. Maria is an active commuter cyclist and electric bike fan, and her family includes her spouse and two large Maine Coon cats.



Laboratory Technician **Krista Vikstedt** has worked at the Kuusakoski Research Centre since January 2019. Her daily tasks include the pretreatment and analysis of various samples, as well as monitoring trainees. Krista loves to travel and enjoys new landscapes and nature, as well as discovering different cultures with their food and wines. In recent years, she and her partner have also become enthusiastic about cottage life, mushroom picking and fishing.



Sample Laboratory Assistant **Anttimatti Walther** began his career with Kuusakoski at the Heinola plant in 2006 and currently works at the Kuusakoski Research Centre in Lahti. Anttimatti is also the uncrowned badminton champion at Kuusakoski. The 36-year-old family man enjoys renovating and rock music, and he also dreams of pursuing further studies – his goal is to “become an engineer when I get older”.



Research Chemist **Mervi Pajula** has a Master of Science degree in Analytical and Inorganic Chemistry and has been with Kuusakoski since spring 2016. Mervi is responsible for routine laboratory analytics, the development and validation of analytical methods, maintaining quality control and R&D project work. Alongside her work, she is studying for a Master of Science degree in Environmental Technology, and she also likes dancing, sewing and growing useful plants. Her family includes her husband, their first baby, who was born in April, and two dogs.

**TAKE
A CAREFUL
LOOK AROUND YOU
EVEN SMALL
OBSERVATIONS
ARE
IMPORTANT**

OCCUPATIONAL SAFETY AND WELLBEING HAVE AN IMPACT NOT ONLY ON WORK CAPACITY BUT ALSO LIFE OUTSIDE OF WORK, SO EVERY ACCIDENT AND INJURY THAT IS PREVENTED IS OF VITAL IMPORTANCE. THE NUMBER OF SAFETY OBSERVATIONS MADE BY KUUSAKOSKI EMPLOYEES IN 2021 INCREASED BY AN IMPRESSIVE

51%





SUCCESSFUL YEAR FOR KUUSAKOSKI ESTONIA

Kuusakoski Estonia had a successful year in 2021 as both B2C and B2B customers increased their volumes. For ferrous metals, the main increase in purchased tons came from B2C customers, with a 28% increase in total visits and 43% increase in tons collected in comparison to 2020. As for non-ferrous volumes, the biggest growth came from B2B customers who sold us 39% more than in 2020. Altogether, 43% of ferrous metals purchases and 35% of non-ferrous purchases were from B2C customers. In short, 2021 was a challenging yet rewarding year for the entire team.

SAFETY INITIATIVE LEADS TO SKIP COVER PROJECT

IN SPRING 2021, A NEW CONTAINER COVER PROJECT WAS LAUNCHED AFTER A SAFETY INITIATIVE PROPOSED BY PRODUCTION MANAGER JARKKO LAHTI TO IMPROVE SAFETY FOR DRIVERS.



A two-part cover is being installed on all containers owned by Kuusakoski that can be opened and closed from the ground, thereby eliminating the risk of falling. The new covers also received positive feedback from drivers for speeding up their work, as they no longer have to climb onto the container, walk

on top of the material, or handle tarpaulins on the ground. The implementation of the project is also supported by Finnish legislation, which requires fall protection when working in areas where there is a risk of falling. Kuusakoski's transport contractor **Koneurakointi Hirvikoski** has also participated in the project.

KuusaCares!



Happy employees who have fun together are a prerequisite for a successful company. In autumn 2021, Kuusakoski Sweden's health work was stepped up through a joint digital health challenge. Over seven weeks, participants in the **Kuusa Care Challenge** were active for more than 6000 hours by walking, performing housework, cycling, exercising during breaks and much more. After the challenge, as many as 30% of participants stated that both their activity level and general wellbeing had increased. The challenge was also linked to charity, and the winning team **Järngänget** (pictured on left) chose to make their contribution to Water Aid.



KUUSA CARE CHALLENGE – FOR A HAPPIER, HEALTHIER WORKDAY IN SWEDEN



ALTEAMS RECEIVES BEST SUPPLIER RECOGNITION FROM RADIO DESIGN

Alteams has been recognised by its customer Radio Design with its Best Supplier Award in recognition of our “High Quality Level and Contribution to Successful Partnership”. Alteams has been a proud supplier to Radio Design on many next-generation, high value-added telecom products since 2012. The award is the result of collaboration at its best between two parties. Radio Design is a multi award-winning technology leader in infrastructure-sharing RF solutions.



US PLAINFIELD SUPPORTS VOCATIONAL EDUCATION FOR PERSONS WITH DISABILITIES

Kuusakoski, US Plainfield is partnered with a local vocational school for persons with autism and other developmental disabilities to create a training programme exposing students to new vocational opportunities. High school and transition students will be trained in phases of dismantling electronic components with materials returned to Kuusakoski for processing. Training includes compliance with adherence to safety standards, use of tools, speed and quality. Students who successfully complete the training will learn valuable work habits and the skills necessary to obtain employment in similar jobs in the community.

REFRESHED BRAND AND NEW WEBSITE



KUUSAKOSKI'S VISUAL IDENTITY WAS UPDATED IN 2021, AND IN NOVEMBER A BRAND-NEW GLOBAL KUUSAKOSKI.COM WEBSITE WAS LAUNCHED.

Our new customer-focused website features, for example, tailored service solutions for different segments and information about sustainability, as well as an interesting overview of our history.

APPOINTMENTS



Olov Boman was appointed **CEO of Kuusakoski Sverige AB** as of 17 March 2021. Boman was previously CEO of Energiservice Skellefteå AB for the past five years. Prior to that, he worked for over 15 years in various positions at Boliden, both in Sweden and abroad. Boman's background in the recycling industry, strong track record of generating results, and management skills provide an excellent basis for developing Kuusakoski's operations in Sweden and taking them to the next level.



Tuomas Haikka (MSc. Environmental Economics) was appointed **Chief Sustainability Officer of Kuusakoski Recycling** as of 1 November 2021. Haikka had a long career at global stainless steel manufacturer Outokumpu as Director of Environment and Sustainability, Strategy Director, and in Order Supply Chain Management positions at the European business unit and the Tornio plant. Early in his career he worked in for the lobbying organisation Technology Industries of Finland and the Finnish Energy Authority. Haikka brings with him extensive experience and insight into the importance of sustainability and stakeholders in our business.



Last Flight

THERE'S A SENSE OF THE WINGS OF HISTORY IN THE AIR AS THE FIRST PASSENGER AIRCRAFT IN FINLAND IS RECYCLED. THE PROCESSING OF THE FINNAIR AIRBUS A319 BY KUUSAKOSKI EXCEEDED ALL EXPECTATIONS: ONLY 0.8% OF THE AIRCRAFT COULD NOT BE RECYCLED.

An unprecedented visitor arrived at Kuusakoski's facility in Seutula in March 2021: a Finnair Airbus A319 aircraft. Before being delivered to Kuusakoski, Finnair had completed its own disassembly of the 21-year-old plane, removing any components that could be reused, as well as the wings and tail.

"The total number of parts and components salvaged was almost 2000. Some will be reused in our remaining fleet, while others will be sold," says **Timo Rossi**, Project Manager at Finnair.

15 tonnes of aluminium recovered

The processing began with the removal of materials such as composites and cables, after which the plane was crushed into pieces the size of a fist. An airflow separator, magnet and eddy current separator were then used to split the crushed pieces into different fractions, which were transported to other Kuusakoski facilities in Finland for further processing.

"Aluminium made up the bulk of the plane, amounting to approximately 15 tonnes. In addition,

we were able to recover materials such as steel, stainless steel, titanium and copper," says **Sanna-Mari Nevala**, Account Manager at Kuusakoski.

The recovered aluminium was smelted and alloyed over the summer, and the ingots were sent on their way to customers all over Europe. One of the companies using the ingots is KSM Castings Group, a long-term customer of Kuusakoski.

"We manufacture components and systems made of aluminium and magnesium for the automotive industry. Through our production process, aluminium from the Finnair aircraft will end up in automatic models of Mercedes-Benz cars, for example," reveals **Alexander Schwarz**, Strategic Purchaser at KSM.

ALUMINIUM FROM THE FINNAIR AIRCRAFT WILL END UP IN AUTOMATIC MODELS OF MERCEDES-BENZ CARS, FOR EXAMPLE.

Emissions savings equivalent to annual consumption of 55 passenger cars

The use of recycled aluminium saves a significant amount of energy – and therefore also CO₂ emissions. The recycled aluminium materials from the plane help to save enough CO₂ emissions to match the annual consumption of 55 passenger cars.

"The reduction of CO₂ emissions is becoming increasingly important within the automotive industry. In addition to internal measures, we are paying increased attention to the amount of CO₂ emissions generated in the production of aluminium. This will become a decisive criterion for the purchase of aluminium in the coming year," says Alexander Schwarz.

Reject plant minimises residual waste

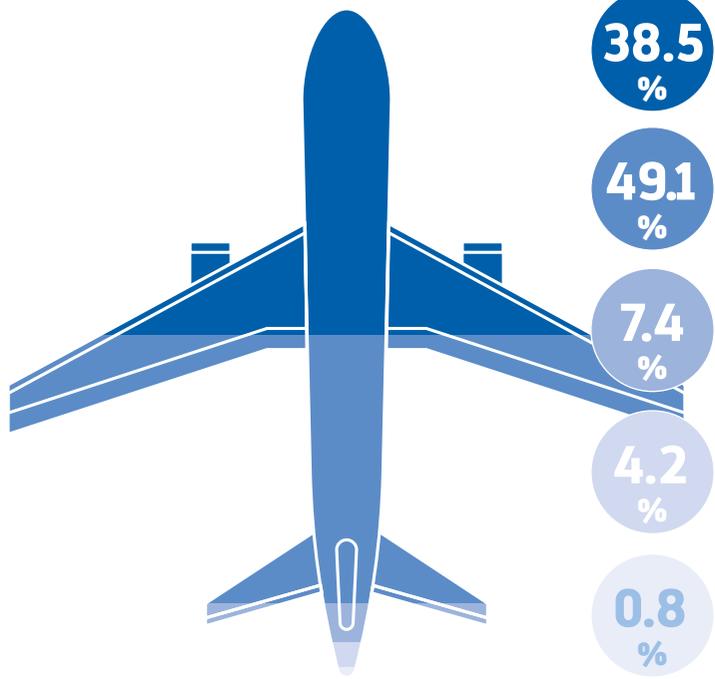
The residual waste from the crushing, i.e. the reject waste, was taken to Kuusakoski's reject plant in Heinola, where almost all the residual metal was recovered for further processing. In the past, these metals were part of the residual waste stream



RECYCLING RATE OF

99.2 %

FOR 40-TONNE AIRCRAFT



Reused: Finnair salvaged around 2000 different parts and components – some will be reused while others will be sold

Recycled: An impressive 15 tonnes of aluminium was recovered, as well as steel, stainless steel, titanium and copper.

Recovered for energy: Materials that were unsuitable for recycling were used to produce solid recovered fuel.

Research: Materials from the aircraft were also used in Kuusakoski's research projects.

Final disposal: Only 290 kilograms of waste, or one percent of the 40-tonne weight of the aircraft, was classified as landfill waste unsuitable for reuse or recycling.



Even if the speed did not quite match the 871 km/h top speed of the Airbus A319, many drivers must have rubbed their eyes in disbelief to see the aircraft on its way from Helsinki Airport to Kuusakoski's Seutula facility.



and therefore unsuitable for further use. Thanks to the reject plant, only 290 kilograms of waste, or one percent of the weight of the aircraft, was classified as landfill waste unsuitable for reuse or recycling – this is roughly equivalent to one electric car battery. The remaining materials were used to produce solid recovered fuel.

“The project was even more successful than we had expected, and our cooperation with Kuusakoski was seamless,” says Project Manager Timo Rossi on behalf of Finnair. •



50 YEARS OF CRUSHING

In 1972, history was made at Kuusakoski's Heinola plant when Finland's first car shredding plant started operations. As a result, the processing of end-of-life vehicles became much more efficient. The shredding plant made it possible to separate different fractions from the crushed material on an industrial scale. Thanks to precise separation techniques, 95% of end-of-life vehicles can be recycled.

More than 85% of materials are recycled

- metals, plastics, rubber

Less than 10% are recovered for energy

- textiles

Less than 5% sent for final disposal

- glass, fluids

SCRAP RALLY

FOLLOW THE LEADER!

IN SUMMER 2021, KUUSAKOSKI HELD ITS FIRST SCRAP REWARD CAMPAIGN FOR TOY CARS. TARGETED AT FAMILIES WITH CHILDREN, THE "SCRAP RALLY" TOUR VISITED OPEN-AIR MARKETS AND WON THE HEARTS OF KIDS AT TEN LOCATIONS THROUGHOUT FINLAND.

outperforms expectations!



Little D was the centre of attention.

A high-spirited pit crew toured Finland in July and August together with the main attraction: a Datsun 100A in Kuusakoski's brand colours and with rally stripes. Fondly referred to as "Little D", the vintage car attracted the attention of both kids and adults, who were invited to sit in the driver's seat while boxes of old toy cars were collected in the trunk.

Cash for clunkers

Inspired by Finland's official "cash for clunkers" scheme, the Scrap Rally encouraged kids bring their old broken toy cars to be recycled. In return, they were given a voucher that they could exchange for a new toy car in the event tent. Information about recycling real cars was also available, as

Kuusakoski is the only operator in Finland that offers an electronic recycling service for all parties in the recycling process.

"Our tour was extremely well received. People of all ages clearly find recycling interesting," says Service Sales Director **Ari Turunen**, who is responsible for vehicle recycling at Kuusakoski.

Over 1300 toy cars that were collected during the summer tour were scrapped at Kuusakoski's shredding plant in Heinola, which kids could watch on YouTube. Just like with real cars, the crushed and separated materials from the toy cars were used as recycled raw materials for the steel industry, while any plastics were used to produce solid recovered fuel to replace fossil fuels. •



Kids were offered special treats and could send "Scrap Rally" postcards to their friends.



The Scrap Rally attracted a lot of local and even national media attention.



MODERN FIRE PROTECTION SYSTEM

One of the biggest risks in the recycling business is fires. To ensure the safety of both personnel and materials, Kuusakoski invested in a new modern fire protection system at the terminal in the port of Gävle, Sweden. The system consists of heat cameras that sense heat, as well as four large water cannons that automatically start spraying water against the heat source. In this way, fires can be prevented before they have time to occur.



SILVER FOR ALTEAMS

EcoVadis, the world's largest and most trusted provider of business sustainability ratings, has awarded Alteams its silver medal (CSR Rating Silver). EcoVadis evaluates sustainability performance across four themes: Environment; Labor and Human Rights; Ethics; and Sustainable Procurement. Alteams has participated in EcoVadis sustainability assessments for four years and achieved its best result so far in 2021. The company's sustainability practices received a good rating: its score of 55/100 puts Alteams in the top 25 percent of companies assessed by EcoVadis.



QUALITY MANAGEMENT RECOGNITION

IATF CERTIFICATES FOR ALTEAMS PLANTS IN CHINA AND POLAND

Alteams Suzhou and **Alteams Poland** were awarded the automotive industry's IATF 16949 quality management certification in 2021. Based on the ISO 9001 standard and international automotive industry's quality standards, IATF 16949 certifies that the company has been audited and found to comply with the requirements of the standard. The certification is often required for customer agreements.



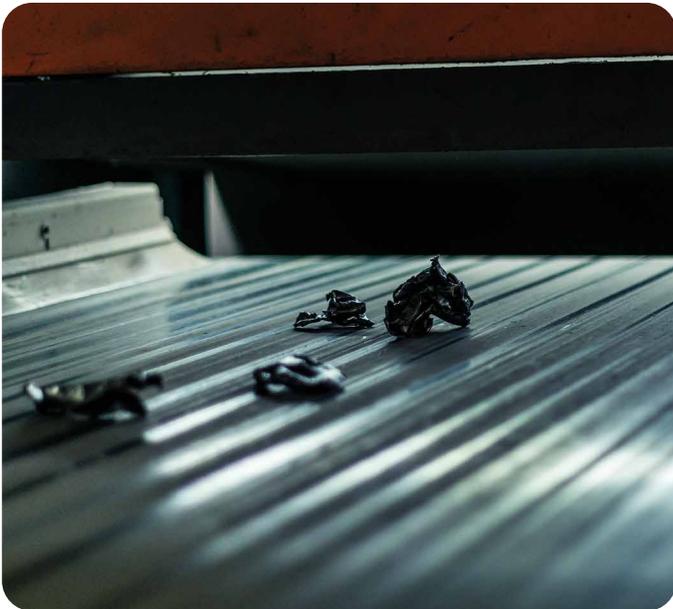
MILLION-EURO SHEAR BALER

In November 2021, Kuusakoski invested in a new Taurus shear baler valued at EUR 1 million. The mobile shear baler is the first in its size class in Europe. The unit rises hydraulically on its feet, allowing a pallet to be moved under it and the device to be moved to another location. Kuusakoski uses its new Taurus mostly in three locations in Finland: the Turku and Pori sites and at the Port of Inkoo. Processing capacity can now be optimised according to where there is a need for material processing. This reduces material transports and in turn also emissions. The new shear baler is 4 to 5 times more productive than older equipment and can cut 15 to 20 tonnes of metal an hour. It can process both iron and steel plates up to 10 centimetres thick, reducing the need for oxy-fuel cutting by 30 to 40% and thereby further reducing emissions. Pictured above with the new Taurus is **Antero Koskinen**, Account Manager in Turku.

INFO

K-INFO RETURNS

Our personnel magazine K-info made a comeback in February 2021 after a break of a few years. The magazine is now published three times a year and is translated into English, Swedish and Estonian. Distributed in break rooms and on notice boards, K-info is targeted especially at those Kuusakoski employees who do not work on a computer on a daily basis.



SWEEEP KUUSAKOSKI UPGRADES SEPARATION SYSTEMS

Having served already for 15 years, SWEEEP Kuusakoski's original Magnet and Eddy Current Separation systems received a full upgrade in 2021. Over the years, it has been proven that better separation by Eddy Current can be achieved if initially sorted by size, with small pieces over one Eddy Current and larger ones over another one in parallel. The 9-month upgrade programme included the installation of size sorting after granulation, 12 conveyor belt changes and an additional Steinart Eddy Current. The total value of the investment was GBP 390,000, and the project was successfully completed in November 2021 with the SWEEEP engineering team carrying out the majority of work.

QUIZ



How many toy cars were collected for recycling during the Scrap Rally?

- a) Around 300
- b) Around 1300
- c) Around 3000

What is the most important task of a reject plant?

- a) Reduce emissions
- b) Improve recovery
- c) Crush metal

How much of the Finnair Airbus A319 aircraft could not be recycled?

- a) 0.8 %
- b) 5.8 %
- c) 10.8 %

Which customer recognised Alteams with its Best Supplier Award in 2021?

- a) Radio Design
- b) Design House
- c) Radio Ga Ga

How old were the metro cars recycled by Kuusakoski?

- a) 24 years
- b) 34 years
- c) 44 years

What does the Kuusakoski laboratory study using a bomb calorimeter?

- a) Recycled fuels
- b) Explosive force
- c) Lunch of the day

What year was Kuusakoski founded?

- a) 1884
- b) 1904
- c) 1914

What is Ekopark Lahti's most important product?

- a) Recycled aluminium
- b) Solid recovered fuel
- c) Recycling ideas

How many tonnes of tyres does Kuusakoski recycle each year in Finland?

- a) 35,000 tonnes
- b) 60,000 tonnes
- c) 85,000 tonnes

How did you like our magazine?

- a) I just looked at the pictures
- b) An energetic read
- c) I'll recycle it

Answers: BBAACACBBB

KUUSAKOSKI GROUP



KUUSAKOSKI GROUP COMPRISES THE RECYCLING COMPANY KUUSAKOSKI OY, THE FOUNDRY COMPANY ALTEAMS OY, AND THE PROPERTY COMPANIES JOKIRANTAKIINTEISTÖT OY AND KIINTEISTÖ OY LAHDEN NOROKATU 5. THE PARENT COMPANY OF KUUSAKOSKI GROUP IS KUUSAKOSKI GROUP OY, WHICH IS OWNED IN ITS ENTIRETY BY THE KUUSAKOSKI FAMILY. KUUSAKOSKI OY AND ITS SUBSIDIARIES FORM THE RECYCLING BUSINESS GROUP AND ALTEAMS OY AND ITS SUBSIDIARIES THE FOUNDRY BUSINESS GROUP.

Group's financial result

Kuusakoski Group posted in 2021 one of the best results in its history and its best in more than ten years. The Group's result for the 2021 financial year was due particularly to the strong result of the recycling business. The result for the foundry business remained weak in 2021, although profitability did improve compared to the previous year and the budget. Kuusakoski Group's revenues increased by almost 50% over the previous year and exceeded the EUR 700 million level.

Kuusakoski Group posted revenues in 2021 of EUR 717.6 million, which is 48% more than the previous year (486.5 million in 2020, 517.5 million in 2019). The Group's result improved significantly compared to the previous year. The consolidated operating result was EUR 51.7 million, which represents 7.2% of revenues (9.9 million and 2.0% in 2020, -1.3 million and -0.2% in 2019). The net result for the financial period after taxes was EUR 40.0

million (4.8 million in 2020, -6.9 million in 2019). The return on investment (ROI) was 24.3% (5.5% in 2020, -0.7% in 2019) and the return on equity (ROE) 29.0% (4.0% in 2020, -5.6% in 2019).

Revenues from recycling operations accounted for approximately 85% of the Group's revenues.

Financing and capital expenditure

Kuusakoski Group's cash flow from operating activities before investments totalled EUR 32.8 million (31.9 million in 2020, 14.3 million in 2019) and after investments EUR 14.0 million (24.5 million in 2020, -6.0 million in 2019). The amount of working capital tied to Group activities increased by EUR 31.3 million compared to the previous year.

The Group's investments totalled EUR 19.6 million (9.3 million in 2020, 20.3 million in 2019), which represents 2.7% of revenues (1.9% in 2020, 3.9% in 2019).

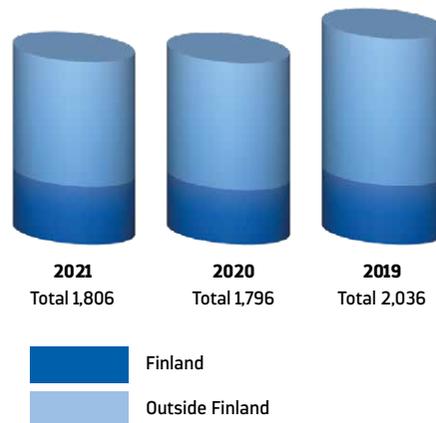
In the recycling business, higher metal prices during the year under review increased the amount of capital tied up in the company's working capital. In total, the amount of working capital tied to the group's activities increased by EUR 27 million compared to the previous year. During the year under review, projects related to managing working capital continued and internal processes were further developed, as a result of which capital tied up in inventories was controlled. Due to the strong result, the group's investment programme was accelerated during the year under review having been at a low level during the previous year, partly due to the uncertainty caused by the coronavirus pandemic.

Investments in the foundry business focused on basic repairs and modernisations of existing machinery and equipment, as well as on improving production efficiency and competitiveness.



Personnel

At the end of the year under review, the Group had 1,806 employees.



The number of personnel increased by 59 in the recycling business group and decreased by 49 in the foundry business group. The increase in the number of personnel in the recycling business group occurred mainly in the Finnish and Swedish business units. The availability of labour has become more difficult in several units, but so far this has not had an impact on operations. The decrease in the number of personnel in the foundry business group occurred mainly within the Chinese business unit.

The total sum of salaries, wages and rewards paid to personnel during the year under review in Kuusakoski Group was EUR 63.6 million (58.2 million in 2020, 62.8 million in 2019).

Risks and risk management

The aim of Kuusakoski Group's risk management is to identify the most significant risk factors related to operations and to manage risks in such a way that the Group's strategic and financial objectives are achieved.

Within the recycling business group, work began in 2021 on updating its risk management process, which will be completed during 2022. As part of the risk management work, the most significant risks in the recycling business will be redefined, risk management processes will be updated, and risk management work will be implemented throughout the organisation.

In the recycling business group's risk management, risks are divided into strategic, operational and financial risks. The most significant strategic risks are related to rapid changes in the operating environment and changes in legislation, both in the countries in which Kuusakoski operates and globally. In terms of operational risks, the greatest risks are related to fires, the functioning of the logistics chain and production processes, and

competitiveness. In terms of financial risks, the most significant risks are economic crises, contractual risks and rapid changes in raw material prices. As part of the risk management process, the company has defined control measures for the identified risks and regularly monitors the adequacy and effectiveness of these measures. The recycling business group's management regularly monitors its risk management action plan and insurance cover. Currency and metal derivatives that are used to hedge against risks are measured at their fair value, and the fair value is recorded as a gain or loss.

The prevailing coronavirus pandemic and the sudden changes in the operating environment of the recycling business resulting from the associated restrictions have posed challenges to risk management on several fronts over the past two financial years. However, the negative impacts of the coronavirus pandemic on the recycling business have been limited, and operations have been able to continue almost normally.

The key elements of the risk management policy for the foundry business group are the identification, assessment and minimisation of business-related risks. The goal of this policy is to help anticipate threats and opportunities and thereby ensure business continuity.

The foundry business group has a few large customers on which it is relatively dependent. The development of possible substitute manufacturing technologies and materials is actively monitored. The group operates internationally and its business involves financial risks arising from exchange rate fluctuations, which it seeks to hedge against by means of forward foreign exchange contracts or other similar instruments. The impacts of the coronavirus pandemic on the group's operations remain difficult to assess. Accordingly, the coronavirus is still a major uncertainty factor.

Russia's military action against Ukraine is expected to increase uncertainty and raise the prices of raw materials, energy and other factors of production. Uncertainty also surrounds the logistics that pass through Russia, and transportation is being re-routed. The effects of the war on the future customer demand of the foundry business cannot be assessed at this stage.

Changes in group structure

There were no changes in group structure within Kuusakoski Group during the year under review. •

Kuusakoski Group's liquidity remained good. The total amount of the committed revolving credit facilities remained at EUR 50 million (50 million in 2020, 50 million in 2019). These revolving credit facilities in their entirety were unused at the end of the year under review. The Group had no short-term commercial papers issued at the end of the year under review.

The Group's equity ratio at the end of 2021 was 47.6% (43.7% in 2020, 42.9% in 2019). The net gearing ratio at the end of the year was 14.0% (22.8% in 2020, 41.7% in 2019). The amount of net debt decreased during the year under review by EUR 6 million and amounted to EUR 22 million at the end of the year.

The parent companies of the business groups owned by Kuusakoski Group are responsible for their own financing in accordance with the Treasury Policy of Kuusakoski Group. The Treasury Department of Kuusakoski Oy monitors the implementation of the Treasury Policy throughout the entire Group.

RECYCLING BUSINESS GROUP

KUUSAKOSKI OY AND ITS SUBSIDIARIES FORM THE RECYCLING BUSINESS GROUP.

Market situation and business performance

The result posted by the recycling group for the 2021 financial year is one of the best in the company's history and the best in recent years. The strong profitability has been positively affected by the favourable market situation, which has been reflected in high metal prices and strong demand from end customers. The coronavirus pandemic that continued during the year under review did not cause significant systemic harm to the business, despite occasional regional challenges.

The general recovery of the global economy began in the recycling business at the end of 2020, when global market prices and demand for metals strengthened significantly. The positive trend in metal prices due to strong demand continued in the first half of 2021. During the year under review, the price levels of most of the recycling business's most important metals were at their highest levels in recent history. Average prices for the year increased significantly over the previous year (+34–61%). Global market prices for metals increased due to growing demand, the reduced availability of materials and high energy prices.

The revenues of the recycling business group amounted to EUR 625.9 million (415.2 million in 2020, 435.1 million in 2019), representing an increase of more than 50% compared to the previous year. The increase in revenues was primarily due to higher metal prices, although the total amount of recycled materials also increased over the previous year. Profitability improved significantly. The operating profit amounted to EUR 51.5 million (14.6 million in 2020, 5.4 million in 2019), representing 8.2% of revenues (3.5% in 2020, 1.2% in 2019). Previous structural changes and investments in further processing capabilities had a major impact on profitability. As a result of these, the company was able to profitably benefit from the favourable development in the global markets and prices.

The return on investment (ROI) was 30.3% (4.4% in 2020, 0.4% in 2019). The net result was EUR 38.4 million (1.6 million in 2020, -2.6 million in 2019), which represents 6.1% of revenues (0.4% in 2020, -0.6% in 2019). The net result includes EUR 2.7 million in group contributions to other group companies.

In line with its strategy, the company is investing in serving its key customers in both domestic and international markets. In line with its key customer strategy, the company is investing in developing its own processes and end products to ensure that the needs of its key customers can be met now and in the future. At the same time, the company is preparing for the ongoing green transition in the industry by taking the latest requirements into account in future investments and decisions.

The strong result of the recycling group is based on improved profitability in all the group's country units. Challenges during the financial year have been caused by problems in global logistics chains and the slow response of credit insurers to improved economic conditions.



IN LINE WITH ITS STRATEGY, KUUSAKOSKI IS INVESTING IN SERVING ITS KEY CUSTOMERS IN BOTH DOMESTIC AND INTERNATIONAL MARKETS.



IN FINLAND, the profitability of recycling operations clearly improved compared to the previous year. Finland retained its central position in terms of generating results in the recycling business in 2021. The group's diverse range of service offerings and advanced further processing capabilities contributed towards the strong result.



IN SWEDEN, the result from the recycling business was profitable and improved compared to the previous year. The good result was due to strong domestic demand and higher metal prices, as well as the company's investments in increasing the degree of further processing.



IN ESTONIA, Kuusakoski's result was positive. It clearly improved compared to the previous year, when a negative result was posted. Sourcing volumes of materials increased significantly over the previous year, partly due to higher market prices.



IN GREAT BRITAIN, Kuusakoski Ltd, which specialises in processing stainless steel in Sheffield, posted a positive result, as in previous years. The operating result of the WEEE joint venture SWEEP Kuusakoski Ltd in Kent was again positive, even though the recycling rate for waste electrical and electronic equipment in society has not returned to the levels that preceded the coronavirus pandemic.



IN THE USA, Kuusakoski focuses on WEEE recycling. The operating result in the USA improved significantly over the previous year and was profitable.

R&D, environmental protection, and occupational health and safety

During 2021, Kuusakoski drew up a new Sustainability Programme for the company. One of the outputs of the programme is the Kuusakoski Sustainability Report, which will be published as part of the annual report. The new sustainability report is an integrated Kuusakoski Recycling Sustainability Report and covers the reporting period 11.2021-31.12.2021 with reference to the GRI reporting standards for 2021. The report is based on an internal materiality assessment, and the sustainability information has not been verified by an external party.

Research and development activities in 2021 focused on examining various recycled materials and material flows, as well as further developing production processes. In-depth information on various recycling fractions was collected through systematic trials, certified samplers, and reliable research and analytics.

Since the establishment of the Kuusakoski Research Centre, its operations have been developed actively. Highlights in 2021 included the accreditation of research into solid recycled fuels. In March, the Kuusakoski Research Centre in Lahti was granted the accreditation number T353 by the Finnish Accreditation Service FINAS. The Kuusakoski Research Centre was found to meet the requirements of the standard SFS-EN ISO/IEC 17025:2017 regarding fuel testing. This accreditation enables Kuusakoski to offer fuel analysis services also to customers.

External research collaboration continued to be active. Research partners included various research institutes, public authorities and customers, as well as other actors in the value chains for materials. Research collaboration was carried out, for example, to ensure the proper management of potentially harmful substances found in recycled materials.

The environmental competence of employees was further reinforced in 2021 through environmental training courses and emergency drills. The monitoring of emissions and environmental impacts continued normally with water, air emissions and noise surveys.

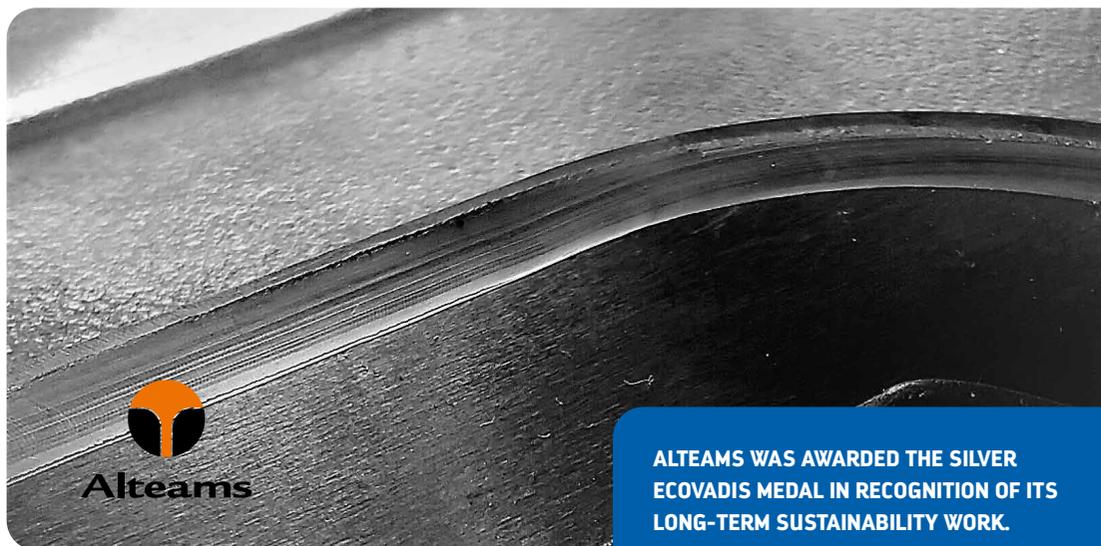
Long-term work on improving occupational safety continued during the year under review. The proactiveness of employees in reporting safety deficiencies and helping to prevent accidents increased significantly. The target for the number of safety observations, more than 4 observations per person, was achieved in Finland. In terms of the number of accidents and the accident frequency, the trend in Finnish operations was not in line with targets. Due to accidents that occurred in the second half of the year, the frequency of accidents leading to absences increased com-

pared to the previous year and resulted in a lost time injury frequency (LTIF) rate at the end of 2021 of 20.4 (13.8 in 2020). The LTIF rate for the entire recycling business group at the end of 2021 was 20.9.

Much attention continued to be paid to improving fire safety. Ignitions were reported actively, and fires occurring at service locations were successfully controlled using initial firefighting methods without any significant injuries or damages. Investments in initial firefighting equipment and employee safety training continued throughout

the year. A major investment in a new extinguishing system at Gävle, Sweden, was completed.

At the end of 2021, scheduled external audits for operations in Finland were conducted for the ISO 9001 quality management system, the ISO 14001 environmental management system and the ISO 45001 occupational health and safety management system. Internal audits of environmental, occupational health and safety, and quality management systems were conducted according to schedule. •



FOUNDRY BUSINESS GROUP

ALTEAMS OY AND ITS SUBSIDIARIES FORM THE FOUNDRY BUSINESS GROUP.

Market situation and business performance

Global market prices for raw materials and transportation costs rose very sharply during 2021. This hampered the positive development of the foundry business group's profitability despite strong customer demand. The availability of transportation and its slowdown also made it difficult to stick to delivery schedules, especially in the export trade of the Chinese business unit. Despite the challenging operating environment, group companies managed to serve customers successfully and increase their market share. The coronavirus pandemic that began in early 2020 continued to have a negative impact in 2021 and caused intermittent regional challenges for the group's business.

The revenues of the foundry business group increased by 29% in 2021 compared to the previous year and amounted to EUR 96.0 million (74.6 million in 2020, 84.5 million in 2019). Sales in both the electric vehicle and industrial applications segment, as well as the communications

network segment, increased significantly among all key customers.

The group's operating loss decreased significantly compared to the previous year and amounted to EUR -0.2 million (-4.3 million in 2018, -6.5 million in 2019), which represents -0.2% of revenues (-5.8% in 2020, -7.6% in 2019). The result before appropriations and taxes was EUR -11 million (-5.0 million in 2020, -8.7 million in 2019). The group's net result was EUR 1.3 million (3.5 million in 2019, -4.4 million in 2019). The result before taxes and net result includes a Group contribution of EUR 2.7 million (8.7 million in 2020, 4.3 million in 2019). The return on equity (ROE) was 5.5% (14.3% in 2020, -15.8% in 2019).

Significant investments in the group's sustainable development and corporate social responsibility continued. In recognition of this long-term sustainability work, Alteams was awarded the 2021 Silver EcoVadis Medal. EcoVadis is the first and largest collaborative platform providing Supplier Sustainability Ratings for global supply chains. EcoVadis evaluates sustainability performance



IN CHINA, customer demand was very good and the sales growth accelerated towards the end of the year. Tool manufacturing was moved to the same premises as the foundry during the second quarter. The introduction of the automotive industry's quality standards was completed.



IN FINLAND, customer demand and orders grew strongly. The number of plant personnel increased following new recruitments.



IN POLAND, the third wave of the coronavirus pandemic hit in the spring causing a high number of sick leaves. The availability of additional labour has also been challenging in Poland. This has contributed to slowing both the growth in revenues and the positive trend in profitability. The introduction of the automotive industry's quality standards was completed.



IN INDIA, the coronavirus pandemic caused a nationwide lockdown in the spring, which significantly weakened the operating conditions of the group's joint venture. Customer demand and profitability returned to normal levels only during the autumn.

across four themes: Environment; Labor and Human Rights; Ethics; and Sustainable Procurement.

Research and development

As in previous years, waste heat management played an important role in several R&D projects. Development work on a highly heat-conducting aluminium alloy better suited for industrial use was continued together with Kuusakoski Recycling. This development work achieved the goals set for it. New methods were developed for attaching technologically advanced cooling fins to increase the cooling capacity of products, as well as for casting components with even thinner walls to reduce weight.

The foundry business group's management system is based on the international quality standard ISO 9001 and the automotive industry's IATF 16949 standard. Its environmental management system is based on the ISO 14001 standard.

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Alteams

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A first-choice partner for advanced cast aluminium solutions

Alteams offers a wide range of design and manufacturing services that help you create advanced, high-quality aluminium castings cost-effectively. We operate on several continents, providing professional and flexible service and deliveries anywhere in the world.

- Optimization of your casting part design for improved productivity
- In-house design and build of tooling
- Heat transfer, EMI shielding, IP sealing, pressure leakage, weight reduction and structural challenges
- Secondary processes including CNC, shot blasting, tumbling, wash, Friction Stir Welding, FIP, painting, plating, and sub-assembly

www.alteams.com



KUUSAKOSKI GROUP PROSPECTS FOR 2022

Regarding the recycling business group, the market situation is expected to remain favourable. Demand and price levels are expected to remain at a good level. However, they are not expected to rise significantly from the record highs during the year under review. The coronavirus pandemic, which still prevails at the time of signing the financial statements, will continue to cause instability in the operating environment and the group's prospects for 2022. The unpredictability in the global economy and politics plus high energy prices pose challenges for the financial year.

Regarding the foundry business group, demand is expected to continue to be strong and profitability to develop positively in 2022. Russia's military action against Ukraine is not expected to have a direct impact on the company's operations, but the overall future economic impact cannot be accurately assessed at this stage.

Events after the financial period

The company has not faced any significant events after the end of the financial period. In February 2022, Russia invaded Ukraine, causing uncertainty in the global economy. This is not expected to have any direct impact on the company, but indirect effects may be caused by rising commodity prices, for example.

PROPOSAL OF THE BOARD

The distributable funds of Kuusakoski Group Oy amount to EUR 107.3 million, of which the net profit for the financial year accounts for EUR 9.0 million.

The Board of Directors proposes to the Annual General Meeting that the distributable funds be used as follows:

For payment of a dividend of EUR 150.00 per share	EUR 9.0 million
To be retained in shareholders' equity	EUR 98.3 million
Total	EUR 107.3 million

In addition, the Board of Directors requests authorisation from the Annual General Meeting to decide on a maximum additional dividend of EUR 67 in the second half of the year should the Board of Directors consider that the company's earnings forecast, market outlook and liquidity allow it.

No significant changes have occurred in the company's financial position after the end of the financial year. The company's liquidity is good, and in the view of the Board the proposed distribution of funds does not risk the company's financial standing.

ORGANISATION, MANAGEMENT AND AUDITOR

The Members of the Board elected by the Annual General Meeting on 27 April 2021 comprise **Johan Kronberg, Veikko Kuusakoski, Mariella Kuusakoski-Toivola, Lauri Peltonen and Arno Pelkonen. Tapio Kuusakoski and Tiina Orasaari** have served as deputy members. Johan Kronberg has served as Chairman of the Board.

Authorised Public Accountants Ernst & Young Oy has acted as the company's regular auditor and Authorised Public Accountant **Juha Hilmola** as the responsible auditor. **Veikko Kuusakoski** has served as President of Kuusakoski Group Oy.

Espoo, 12 April 2022

Johan Kronberg, Chairman of the Board
Veikko Kuusakoski
Mariella Kuusakoski-Toivola
Lauri Peltonen
Arno Pelkonen

KUUSAKOSKI GROUP DONATES 200,000 EUROS TO HUMANITARIAN AID FOR UKRAINE

An Extraordinary General Meeting of Kuusakoski Group Oy on 14 March 2022 decided on a donation of EUR 200,000. The donation will be made to UNICEF and the Finnish Red Cross on behalf of the group companies Kuusakoski Oy and Alteams Oy.

SUSTAINABILITY

AT THE HEART OF OUR CUSTOMER-FOCUSED STRATEGY

OUR VISION IS TO BE THE PREFERRED PARTNER TO OUR CUSTOMERS IN RECYCLING SERVICES AND IN THE DEVELOPMENT OF MORE SUSTAINABLE BUSINESS OPERATIONS. WE ARE AT THE HEART OF THE CIRCULAR ECONOMY AND SEE SUSTAINABILITY AS THE CORNERSTONE OF OUR COMPETITIVENESS, LONG-TERM GROWTH AND SUCCESS.

HIGHLIGHTS IN 2021

- SUSTAINABILITY PROGRAMME
- UPDATED CODE OF CONDUCT
- WE INVESTED 11.2 M€ IN CLEANER AND MORE ENERGY-EFFICIENT PRODUCTION
- OUR RECYCLED PRODUCTS HELPED TO AVOID 1.49 MILLION TONNES OF CO_{2e} EMISSIONS

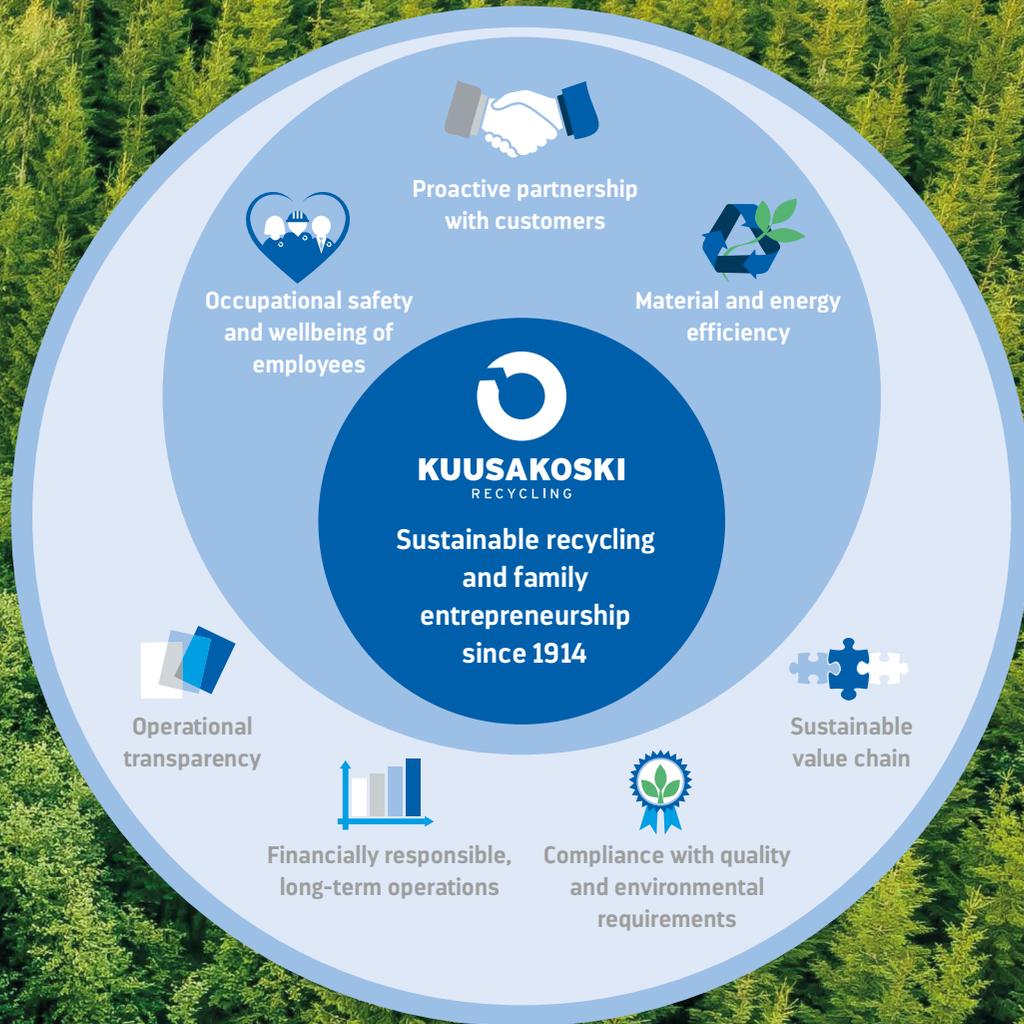
Responsibility and sustainable development are an integral part of our business. Our operations are based on Kuusakoski's values, code of conduct and a proactive partnership with our stakeholders. We see our sustainable business model, managed supply chain and developing responsible operations as a great opportunity.

Sustainability programme

In 2021, we prepared a new Sustainability Programme for the company. During the preparation work, we took into account a wide range of feedback from our customers and other stakeholders, as well as their increased expectations. We also defined the key sustainability drivers for implementing our strategy that, together with our updated in-house materiality assessment, formed the framework, key themes and the sustainability commitments of the programme. We wanted to make sure we were working on the right things.

The circular economy, the green transition and growing concerns about climate change

KUUSAKOSKI'S SUSTAINABILITY THEMES



are increasing the importance of the circular economy and life cycle information, as well as the demands for environmentally, socially and economically responsible practices throughout the supply chain. Our customers also need information on the sustainability of products, such as footprint calculations, as they work towards their own sustainability goals. Legislative and norm-based requirements for both reporting and transparency are increasing. The ability to report on the sustainability and goal-oriented development of operations has also been taken into account in the objectives of our Sustainability Programme.

One of the main purposes of the programme is also to invite all Kuusakoski employees and partners along on our joint sustainability journey. In order to enable effective cooperation between our units in different countries, we decided to set up an sustainability network with participants from each country and business area. Our goal for 2022 is to harmonise our practices in different

ALL OUR PRODUCTS ARE RECYCLED RAW MATERIALS MADE FROM RECYCLABLE MATERIALS, AND THE SERVICES WE PROVIDE ARE ALL CONNECTED TO THE REUSE, RECYCLING, PROCESSING AND SAFE DISPOSAL OF THESE MATERIALS

countries. In our corporate sustainability work, it is important that all our functions achieved the set target together.

The goal of the programme is to develop clear action plans, guide our operations, and monitor and report on progress. Our Sustainability Programme and network together with our reporting model will enable the management of sustainability issues to be integrated into Kuusakoski's strategy, risk management process and management system.

Our products and services – implementing the circular economy in practice

Kuusakoski is the leading company in Northern Europe offering sustainable recycling services. Our

strengths are our expertise in materials, recycling and environmental technology. In addition to **recycling metals**, we process **waste electrical and electronic equipment** and produce **solid recovered fuel** from energy-containing fractions that are not recyclable. All our products are recycled raw materials made from recyclable materials, and the services we provide are all connected to the reuse, recycling, processing and safe disposal of these materials. Everything we develop, process, manufacture and deliver contributes to a more sustainable tomorrow. The raw materials we supply enable our customers to achieve significant emission reductions and a more sustainable life cycle for their products. Our products and services are a response to global challenges, such as climate change, energy and resource scarcity, urbanisation and the electrification of society. Recycling enables sustainable economic growth. •

AT KUUSAKOSKI WE FOCUS ON RECYCLING WITH THE AIM OF LIFE CYCLE OPTIMISATION

The entire life cycle of products or materials must be taken into account when considering the efficient use of resources, sustainable production and consumption. Recycling, recyclability and product design that takes recycling into account – “Eco Design” – are of decisive importance in life cycle analyses. Reuse and recycling are by far the best solutions for achieving eco-efficiency. For example, in terms of both climate impact and energy and material inputs, efficient recycling creates a new life cycle with only a fraction of the ecological burdens compared to virgin production.

EFFICIENT RECYCLING OF MATERIALS

We strive to maximise the recycling of end-of-life products and materials. Practical examples of this include producer responsibility agreements, recycling campaigns, and making collection more efficient and easier.

We advise our customers to sort waste materials correctly where they are generated. Thanks to our comprehensive service network, we are close to our customers and do not have to transport materials long distances for processing.

A NEW LIFE CYCLE BEGINS FOR THE PRODUCTS AND RAW MATERIALS WE RECYCLE

The benefits of recycling are realised when virgin materials are replaced by recycled raw materials in production. This results in savings in the consumption of natural resources, avoided CO₂ emissions, improved energy efficiency and a more responsible supply chain. The raw materials we recycle enabled our customers to avoid 1.49 million tonnes of CO₂ emissions.

Read more about avoiding emissions on page 45.



RECYCLING EFFICIENCY AND MATERIAL QUALITY

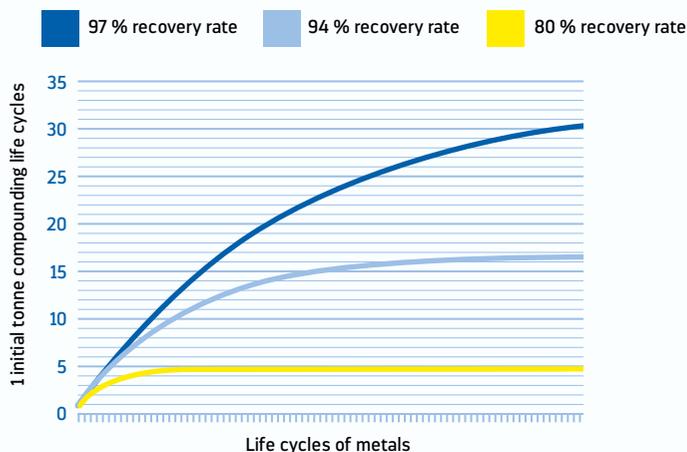
Recycling is an enabler of sustainable economic growth. The green transition and circular economy are based on the efficient recycling of materials at the end of their life cycle. The recycling rate determines the overall life cycle efficiency of the end material and product. This is especially important for metals that can be recycled several times at the end of their service life without any deterioration in quality.

KUUSAKOSKI IS THE LEADING RECYCLER OF METALS

Our processing capacity enables the highly efficient recycling of metals from waste streams back into raw materials.

- Our reject plant and advanced fractionation process enable a metal recovery rate of 94%, which is well above the industry average.
- We continue to make additional investments and perform R&D work with the aim of further increasing the metal recovery rate to 97%.
- We have also developed our non-ferrous (NFR) metal refining process to double the proportion of pure metals and reduce impurities.

RECOVERY RATE AND LIFE CYCLE BENEFIT



As a theoretical example, a recycling rate of 97% leads to twice the potential life cycle efficiency compared to a recycling rate of 94%. Compared to an 80% recycling rate, the benefit is more than 6 times.

MAXIMISING THE LIFE CYCLE

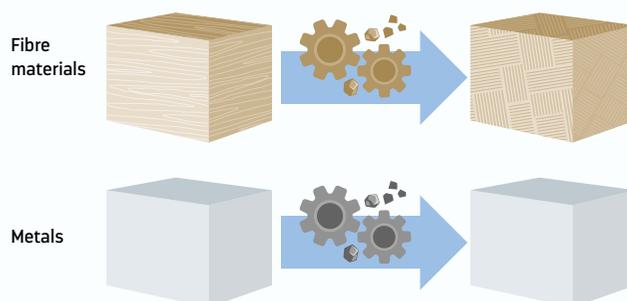
When we productise recycled materials, we maximise their usability. The more virgin and non-renewable raw materials can be replaced by recycled materials, the greater the benefits of the circular economy. For example, by producing cleaner aluminium fractions, we enable a higher utilisation rate of recycled materials for our customers. In this way, we strive to maximise the efficiency of the entire life cycle of materials.

Read our Gränges customer case on the next page.

METALS ARE ENDLESS RECYCLABLE – RECYCLING EFFICIENCY IS DECISIVE

- Metals are elements or alloys and are theoretically recyclable forever.
- The benefits of recycling metals are significant, as producing them from primary raw materials is a heavy process that puts an enormous strain on the environment.
- Recycling metals by smelting and processing is a much lighter process. For example, steel can be recycled almost emission-free with the help of electricity.
- The quality and purity achieved in the recycling process are essential.

UNLIKE FIBRE MATERIALS, THE PROPERTIES OF METALS ARE NOT WEAKENED BY RECYCLING





Gränges is a Swedish aluminium technology company with a history of more than 125 years that drives the development of lighter, smarter and more sustainable aluminium products and solutions. Gränges operates on three continents in the Asian, European and American markets.

GRÄNGES PARTNERS WITH KUUSAKOSKI FOR SUSTAINABLE ALUMINIUM

Gränges is one of the leading aluminium producers that has a strong focus on sustainability. Gränges aims to develop sustainable aluminium products and solutions that have a low climate impact, are circular, resource efficient, and responsibly sourced and produced. The company also strives to have third-party verified and transparent product sustainability information available, starting with the product carbon footprint. Their agenda is very similar to Kuusakoski's sustainability work, and we have found many synergies by working more closely together.

Over the past year, we have together finetuned our recycling processes in order to produce more pure recycled aluminium products for Gränges. By jointly tailoring fractions to better fit Gränges' "recipe", we have achieved great results. The efficiency improvements at both ends have yielded business benefits for both sides and increased the overall recycling rate of aluminium products.

SYNERGIES THROUGH CO-OPERATION:

- Smaller product CO2 footprint through higher recycled input
- Secure, sustainable, responsible and transparent value chain upstream through local sourcing and deliveries
- Increased productivity and reduced total production costs

"This partnership has enabled us to improve our productivity and sustainability, taking us one step closer to our 2025 sustainability

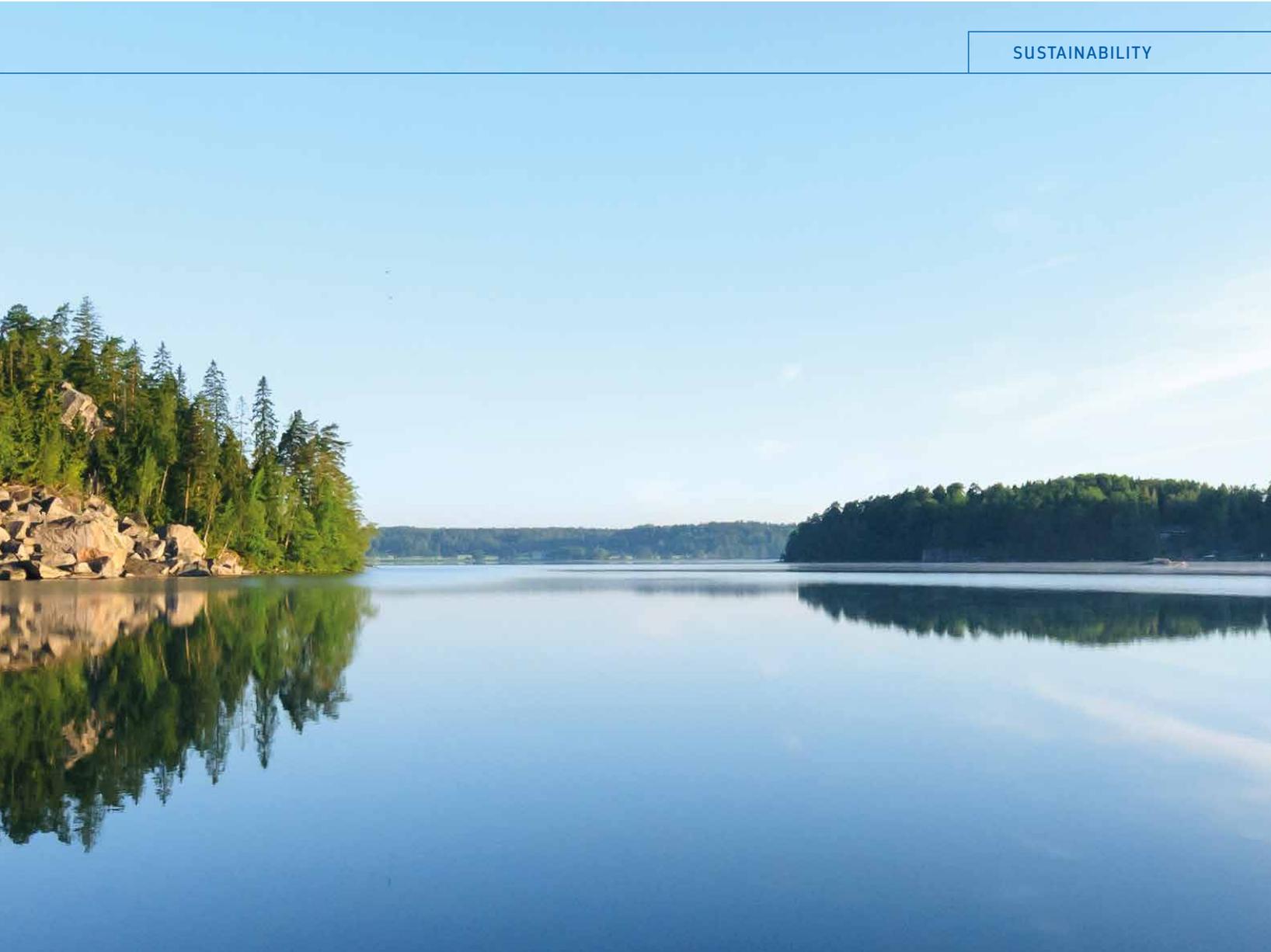
goals and lowering our products' carbon footprint," says **Sebastian Pavez Flores**, Metal Specialist at Gränges.

"This is a good example of the results our customer-driven strategy and inhouse R&D work have yielded for our business and improved the overall life cycle of aluminium products," says **Timo Kuusakoski**, Director of Business Development at Kuusakoski.

What started as a small business cooperation with joint efforts to find ways to improved productivity and sustainability has now grown into a significant volume business.

The work continues in 2022, when we will focus further on harnessing the synergies and driving sustainability actions towards the whole product life cycle. •





OUR PRODUCTS HAVE A SMALL CARBON FOOTPRINT AND A LARGE HANDPRINT

PRODUCT RESPONSIBILITY IS IMPORTANT TO KUUSAKOSKI. NOT ONLY DO WE WANT TO PROMOTE OUR OWN EMISSIONS REDUCTION GOALS, BUT WE ALSO WANT TO ENSURE THE SAFETY AND REGULATORY COMPLIANCE OF THE MATERIALS AND SERVICES WE SUPPLY. WE WANT TO HELP OUR CUSTOMERS ACHIEVE THE GREATEST POSSIBLE BENEFIT DURING THE LIFE CYCLE OF THEIR OWN PRODUCTS.

We have decided to produce life cycle data and carbon footprints in accordance with the international Greenhouse Gas Protocol for all our main products, recycled metal raw materials (aluminium, copper, steel, zinc and stainless steel) and metal alloys, as well as a dynamic calculator to support our customers. The first part of the work in 2021 was a data-based transportation footprint calculator that enables emissions reporting for customer-, metal- and country-specific logistics.

We also plan to introduce a similar calculator for the entire supply chain during 2022. In addition, we have developed service processes and utilisation concepts to better address the needs of our service customers for sustainability information, and during the year under review we conducted several carbon handprint reports for our services. Our aim is to better serve our customers and integrate recovery, recycling and environmental efficiency calculations into our digital services.



THE BENEFITS OF RECYCLED METALS WHEN THEY REPLACE VIRGIN MATERIALS ARE SIGNIFICANT. THE CARBON HANDPRINT OF OUR DELIVERIES IN 2021 WAS 1.49 MILLION TONNES CO₂E. THE CARBON HANDPRINT REPRESENTS THE EMISSIONS REDUCED BY USING OUR PRODUCTS IN THE CUSTOMER SUPPLY CHAIN.

ENVIRONMENT

The management of environmental issues at Kuusakoski is based on continuously developing operations and minimising adverse environmental impacts. Our operations are guided by site-specific environmental management systems that comply with the ISO 14001 standard. Environmental management systems are a key part of our site management system and the functionality of our sites. Compliance is monitored through internal and external audits. Our principle is that all sites with significant environmental aspects have management systems in accordance with the standard.

The environmental impacts arising from the handling and processing of recycled materials were well controlled in 2021. We operated within the permit limits, and small and temporary exceedances occurred just 20 times throughout our entire yard network. The majority of exceedances concerned metal and oil concentrations in stormwater. All exceedances have also been reported to the relevant authorities, and corrective actions have been taken.

The main environmental impacts and risks at our sites are dust and particulate emissions to the air, emissions to water, direct and indirect energy consumption in processes and related emissions, landfill waste and hazardous waste generated as a byproduct of the productisation of materials, and noise from site processes. The environmental impact of Kuusakoski's operations in relation to the recycling benefits is very small. The use of recycled materials in modern society reduces emissions during consumption and enables the efficient use of resources. For example, in the recycling process, increased energy consumption due to more precise separation and metal recovery leads to multiple energy savings and environmental benefits in the later stages of the life cycle, as virgin raw materials are replaced by recycled materials. Continuously developing more advanced recycling processes and high-quality productisation are solutions for combating climate change and protecting the environment.

Biodiversity

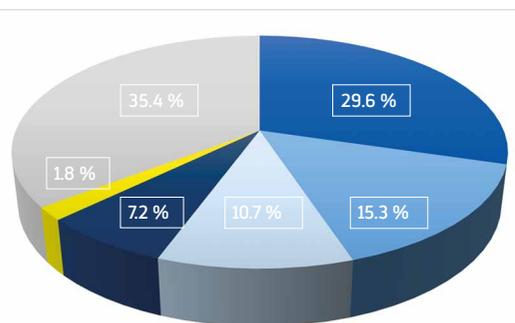
We constantly monitor environmental impacts on biodiversity and aim to minimise negative impacts throughout the value chain. Our operations do not use or take up large areas of land or cause adverse changes, such as nature loss. According to our current risk analysis, we do not operate in biodiversity-sensitive, high-risk areas such as UNESCO World Heritage Sites, Ramsar sites or UNESCO Biosphere Reserves. The operations at our sites have not been found to interfere with local biodiversity or threaten species on the International Union for Conservation of Nature (IUCN) Red List, a list that identifies and documents species that are most in need of protection or are endangered. In addition to Kuusakoski's own operations, no threats to biodiversity or loss of nature have been observed in our supply chain.

MATERIAL AND ENERGY EFFICIENCY

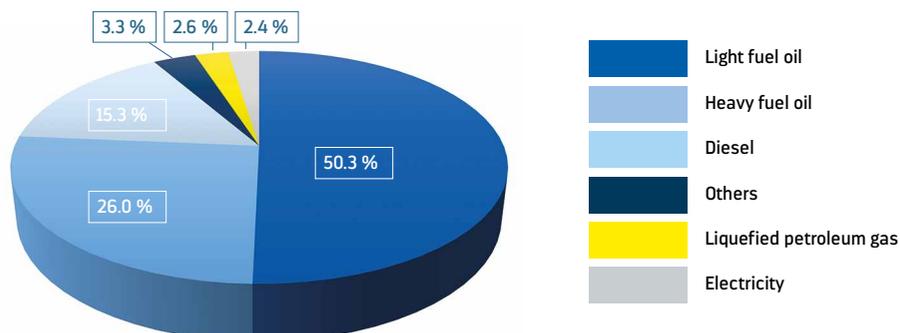
In 2021, we collected a total of 1,178,555 tonnes of recyclable materials, and we consumed 12,929 tonnes of excipients in our recycling processes. Final disposal of unrecyclable materials accounted for 37,712 tonnes, 82,534 tonnes were recovered in the form of solid recovered fuel or as materials, and a record 997,352 tonnes of recycled raw materials were produced, including 745,871 tonnes of metal raw materials. The total utilisation rate of materials delivered to Kuusakoski in 2021 was 96.8%.

MATERIAL BALANCE SHEET				
Collected materials		2021	Waste and emissions	2021
11. Collected materials, tonnes			Waste	
1.2. Metals		955,216.9	3.1. Total amount of waste, tonnes	120,245.8
1.3. Energy fractions		84,125.7	3.2. Waste recovered as materials or energy	82,533.6
1.4. Tyres		69,313.3	3.3. Landfilled waste	14,267.5
1.5. Other materials		69,898.7	3.4. Other final processing of waste	123.7
Production excipients			3.5. Landfilled waste, hazardous waste	20,517.5
16. Production excipients		12,928.5	3.6. Other final processing of waste, hazardous waste	2,804.0
Recycled materials, share of production inputs		98.9 %	Emissions to air (production)	
Total amount of materials used in production		1,191,483.1	4.1. CO ₂ emissions, scope 1, tCO ₂ e	22,232.5
Other production inputs			4.2. CO ₂ emissions, scope 2, tCO ₂ e	1,162.7
Energy, MWh			Products	
6.1. Electricity		41,184.4	Deliveries and products	
6.2. District heating		4,009.1	5.1. Total amount of deliveries, tonnes	997,325.0
6.2. Energy consumption of fuels*		71,278.5	5.2. Metal products	745,870.8
			5.3. Solid recovered fuels	111,627.3
Total energy consumption		116,472.0	5.4. Tyre-based products	112,224.9
			5.5. Other products**	27,602.0
Water consumption in production, m³			* Includes: diesel fuel, light fuel oil, heavy fuel oil, liquefied petroleum gas, pellets, acetylene, propane	
2.1. Water intake		40,118.4	** Main fractions: plastics	
2.2. Drainage water		27,956.4		
2.3. Runoff water at production sites		369,835.8		

SHARE OF ENERGY CONSUMPTION %



SHARE OF CO₂ EMISSIONS %



Improving energy efficiency and minimising the direct and indirect effects of energy consumption is one of the key objectives of our corporate Sustainability Programme. Our sites use a variety of energy sources, including natural gas, propane, diesel, heavy fuel oil and electricity. The The Recy-

cling Group's energy consumption increased in 2021 due to increased collection and processing volumes and amounted to 116,472 MWh.

The Group's approach to long-term energy efficiency is based on continuous improvement. Energy efficiency is part of the overall assess-

ment of all production investments, and we also implement separate efficiency projects. We strive to improve process integration and waste heat recovery.

CO ₂ EMISSIONS, tCO ₂ e							
Country	Scope 1 / Direct emissions	Scope 2 / Indirect emissions from energy	Scope 3 / Logistics	Total emissions CO ₂	Deliveries	Emissions intensity kgCO ₂ e/tonne	Emissions savings tCO ₂ e
Finland	17,460	661	44,844	62,964	589,053	106.9	885,031
Sweden	2,379	181	21,239	23,799	216,371	110.0	298,596
Estonia	885	286	9,732	10,903	130,888	83.3	187,603
United Kingdom	353	2	3,986	4,341	50,513	85.9	106,151
USA	1,155	34	37	1,226	10,500	116.7	7,771
Total	22,233	1,163	79,837	103,232	997,325	103.5	1,485,152

The Kuusakoski Recycling Group also invites energy-saving ideas as part of its initiative system. A separate committee reviews all submitted ideas on a monthly basis, decides on their approval and transfers the approved ideas to the line organisation for implementation. In 2021, we received a total of 26 energy saving ideas, of which 18 were approved as ideas, six were approved for implementation and six required further research to support them. As part of our Sustainability Programme, we are creating a roadmap for improving technically optimal energy efficiency and reducing the environmental impact of our energy consumption in the coming years.

Climate change

For the first time, we determined the carbon footprint of our operations globally for 2021. The increase in recycling volumes, material collection, transportation and processing increased the CO₂ emissions of our operations. The greenhouse gas emissions from our production amounted to 23,395 tonnes (Scope 1 and 2). Reducing emissions from our own operations and throughout the value chain is a goal we will take forward in the coming years. We are reducing emissions and developing emission-free processing options for recycled materials. The general trend is that recycled materials will be more mixed, impure and poorer in the future – and separating and processing them into high-quality, clean products will require ever more efficient processes and even more processing.

At the same time, the extent to which Kuusakoski's recycling business reduces the environmental impact must be taken into account. Every recycled product and tonne of raw material in our operations enables significant emission reductions for our customers. These reductions are realised when our customers replace virgin raw materials with recycled raw materials or fossil fuels with biofuels and solid recovered fuels. These emissions savings from our operations, our carbon handprint, were greater than ever before,

EMISSIONS SAVINGS GENERATED BY OUR PRODUCTS DOWNSTREAM, tCO ₂ e				
	Total	Iron and steel	Aluminium	Copper, zinc and other metals
1.2. Metals	1,354,240	1 045,050	290,219	18,971
1.3. Energy fractions	45,290	-	-	-
1.4. Tyres	78,299	-	-	-
1.5. Other materials	7,323	-	-	-
Total	1,485,152			

both in absolute terms and relative to our carbon footprint.

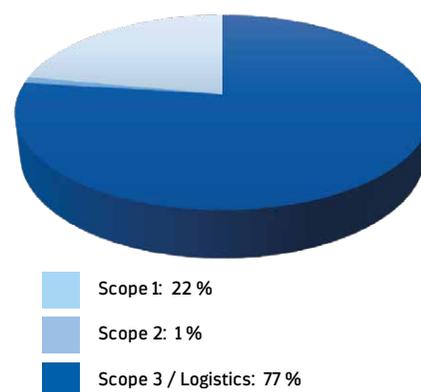
Water separates, rinses and cools

Only our Heinola site uses significant amounts of water directly in its processes. In the immersion process, metals are separated by water based on their specific gravity, and water cooling is used in the aluminium and metal separation process. These processes are based on a closed water circuit and are in line with best available techniques. In addition to its use in processes, water affects all of our sites through runoff and rainwater. All rainwater entering the yards that is in contact with recycled materials, i.e. so-called runoff water, is collected and either treated and cleaned or safely returned to the water system – either by our own process or by a local water company.

Environmental investments

Continuous investment in environmental performance and the development of more sustainable processes require investment. Almost all process investments in recycling or processing capacity can be considered green investments. In 2021, Kuusakoski invested in several processes and new equipment that will reduce our environmental impact and improve resource and energy efficiency. In the UK, we invested in electric, emission-free machinery for our yards. In Finland, we invested in a new mobile shear baler, which allows us to optimise cutting capacity according to the material

CO₂ EMISSIONS BY CATEGORY



situation of our yards instead of transporting the material according to cutting capacity.

In Sweden, we invested more than one million euros in occupational safety, especially fire protection. Our investments in sustainable, cleaner, more energy-efficient production, occupational safety and environmental protection amounted to EUR 11.2 million during the year under review. This reflects the company's strong commitment to developing sustainable operations also in the future.

EMISSIONS SAVINGS FROM OUR OPERATIONS, OUR CARBON HANDPRINT, WERE GREATER THAN EVER BEFORE.



SUSTAINABLE SUPPLY CHAIN MANAGEMENT

THE SUSTAINABILITY OF THE SUPPLY CHAIN IS KEY IN DEVELOPING OPERATIONS THROUGHOUT THE VALUE CHAIN TO MEET THE HIGH STANDARDS OF OUR OWN CUSTOMERS.

Supply chain sustainability is one of the key themes of our Sustainability Programme. In 2021, we identified both risk management and improvements to sustainability and transparency as the most important development areas within the supply chain. During the year under review, we began implementing our Code of Conduct as part of the requirements and approval process for our suppliers. In 2022, our aim is to update our sourcing policies, classify our suppliers, and integrate sustainability assessments into all our supply chain management processes, including supplier approval, monitoring and auditing plans.

Environmental impacts of logistics

Kuusakoski has continued development work to reduce the environmental impacts of our logistics. The EN16258 standard has been introduced to calculate transport emissions. This takes into account, among other things, the weight of the consignment, the route and mode of transport, fuel consumption, and the emissions caused by its distribution and production.

As part of our measures to reduce emissions, Kuusakoski has continued to develop its trans-

CARBON FOOTPRINT OF DELIVERIES	tCO _{2e}
Finland	53,460
Sweden	21,239
Estonia	1,115
United Kingdom	3,986
USA	37
Total	79,837

Kuusakoski's transport emissions in 2021.

port planning system to further reduce empty transports and the number of vehicles thanks to more efficient routing. In addition, the company has focused on monitoring and improving fill levels. Development work in these areas will continue in the future.

During 2022, Kuusakoski will draw up a roadmap for reducing emissions from logistics. The purpose of the roadmap is to describe more systematically the steps that need to be taken to achieve cleaner transports. The roadmap will comprehensively identify the factors that reduce the environmental impacts of transport (such as biofuels, load weights and vehicle characteristics) and outline a plan for how these factors will

be translated into concrete emission reduction measures over the coming years.

Supplier responsibility for logistics

Kuusakoski requires all its partners to comply with existing laws and agreements. Our transport partners are mainly local operators, which makes supplier management easier to control. In Finland, Kuusakoski's partners must be part of the Reliable Partner service, which is used to monitor that our partners fulfil their legal obligations as contracting parties and employers. In addition, our transport partners must meet the legal requirements related to traffic permits and waste transportation, as well as the safety and quality requirements of both Kuusakoski and Kuusakoski's customers.

The Sustainability Programme at Kuusakoski will also be extended to cooperation with transport suppliers during 2022. This will require, for example, the commitment of partners to our Code of Conduct, which was updated in 2021. The sustainability of transport partners is monitored by setting targets and performing regular audits.

OCCUPATIONAL HEALTH AND SAFETY

SAFETY MANAGEMENT AND SAFETY PRACTICES ARE BASED ON THE INTERNATIONAL ISO 45001 STANDARD FOR OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT.



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In 2021, all operations in Finland and some of the operations at our production facilities in the USA were covered by ISO 45001 certification. Altogether, the certified system covers approximately 48% of employees within Kuusakoski's recycling business group. At sites not covered by the certification, safety work is guided by the same principles in accordance with the standard. In addition to Kuusakoski's employees, Kuusakoski's subcontractors and suppliers, as well as everyone working on our premises, are also covered by our occupational safety processes and safety practices. Within Kuusakoski, key safety indicators are discussed monthly by the steering groups of our country units and reported to the recycling business group's Management Team and Board of Directors.

Practical occupational safety is based on site-specific risk assessments, which are reviewed annually and updated as necessary. The updates are always made in connection with significant changes in operations, as well as in response to serious accidents or near misses. In addition to production employees, experts from Kuusakoski's QEHS organisation are involved in preparing new risk assessments and introducing significant updates.

Risk assessments are supplemented by safety observations recorded in an electronic system and daily safety walks carried out at the sites. In Kuusakoski's safety training, employees are encouraged to actively observe and to always report issues that endanger safety and to refrain from performing dangerous work until any possible deficiency or shortcoming has been corrected.

The practice of investigating accidents, serious near misses and fires ensures that informa-

tion about them reaches all employees and that lessons can be learned from the incidents. When investigating accidents at Kuusakoski, a root cause analysis of the cases is performed, and corrective and preventive measures complete with schedules and responsibilities are always determined. Accident investigation reports are reviewed together with employees during monthly safety briefings.

Employees in Finland participate in developing occupational health and safety

Managing occupational health and safety exposures is a vital aspect of Kuusakoski's safety work. All employees at Kuusakoski are covered by comprehensive statutory occupational healthcare and extensive insurance coverage for both occupational and leisure-time accidents. Occupational exposure and workload factors are investigated in accordance with the occupational healthcare action plan in workplace surveys, which are carried out at Kuusakoski sites every five years or whenever operations change significantly. Based on the results of these workplace surveys, measures are planned to reduce the load and exposure. No occupational diseases were reported in Kuusakoski's operations in 2021. The percentage of absences due to sick leave for all employees in Finnish operations was 4.5%.

Employees participate in the development of safety at Kuusakoski in connection with safety briefings held by their supervisors, by contributing safety ideas and by participating in the activities of Kuusakoski's Occupational Health and Safety Committee. The committee met four times in 2021, and at the end of the year under review, new

occupational health and safety officers and the Occupational Health and Safety Committee were elected for the period 2022–2023.

In 2021, the Everything in Order ("Kaikki Kunnonssa") campaign was launched in Kuusakoski to further strengthen employee participation in the development of occupational health and safety. As part of the campaign, webinars on various occupational health and safety themes have been held, and an 11-member team of Carers was created among employee representatives to motivate all employees to contribute towards the development of occupational health and safety. All Carers also completed Wellbeing at Work Card Training during the year under review.

Also in 2021, employees were offered the chance to benefit from the services of a health coach to support a healthier and more active everyday life. The six-month support was received by 20 Kuusakoski employees, and the results have been excellent in terms of lifestyles, health, mental wellbeing and even musculoskeletal health.





Safety training was held monthly in 2021, and 137 Kuusakoski employees participated in one-day safety culture training. In addition, employees were trained locally in such areas as radiation and chemical safety. At the Kuusakoski plant in Heinola, an online safety briefing was introduced for visitors.

Vision: zero accidents

In 2021, Kuusakoski became a member of the Finnish Vision Zero Forum and received a LEVEL II – Towards World Class rating at the beginning of the year for our safety work. The systematic and long-term development of occupational safety in Kuusakoski continued in 2021, although the number of accidents and the accident frequency rate in Finnish operations were below the targets. Due to accidents that occurred in the second half of the year, the frequency of accidents leading to absences per million hours increased compared to the previous year and resulted in a lost time injury frequency (LTIF) rate at the end of 2021 of 20.5 (13.8 in 2020). The LTIF rate for the entire recycling business group at the end of 2021 was 20.9.

The proactiveness of employees in reporting safety deficiencies and helping to prevent accidents increased significantly. The target for the number of safety observations, more than 4 observations per person, was achieved in Finland. The number of safety observations within the entire recycling business group has also grown steadily over the previous three years.

FIRE SAFETY

Lithium-ion batteries as a threat to fire safety in the recycling industry

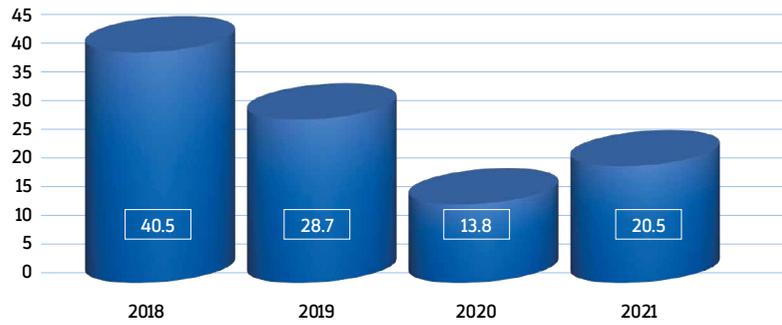
Damaged and broken lithium-ion batteries pose a significant fire risk among recyclable materials. Accordingly, improving fire safety was again at the heart of Kuusakoski's safety operations in 2021. Within the entire recycling business group, the focus was on detecting and reporting ignitions, as well as on effective initial extinguishing measures

in order to avoid more serious fires. The coverage of reporting improved, and all incidents classified as fires that occurred in the operations of Kuusakoski in 2021 (5 in total) were successfully controlled using initial firefighting methods without any significant injuries or damages. A total of 152 minor fires were recorded at all Kuusakoski production sites.

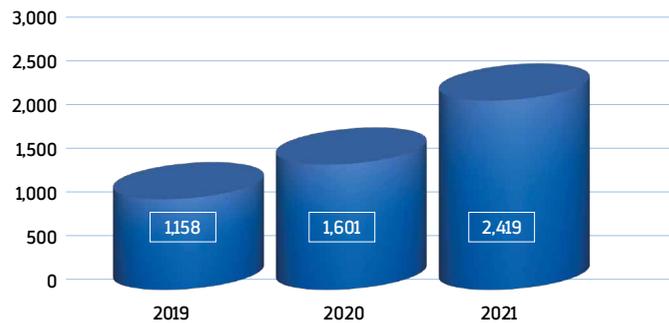
Investments were made in emergency firefighting equipment and the firefighting skills of employees at several Kuusakoski locations. During 2021, significant investments were made in Gävle,

Sweden, to improve fire safety. The comprehensive new fire protection system consists of heat cameras and powerful extinguishers, enabling early detection of ignitions which can then be extinguished before the fire spreads. As part of the investment, an expansion of the area was also carried out, which will make it possible to create a buffer zone between the piles of material more efficiently and thus help to control the spread of a possible fire.

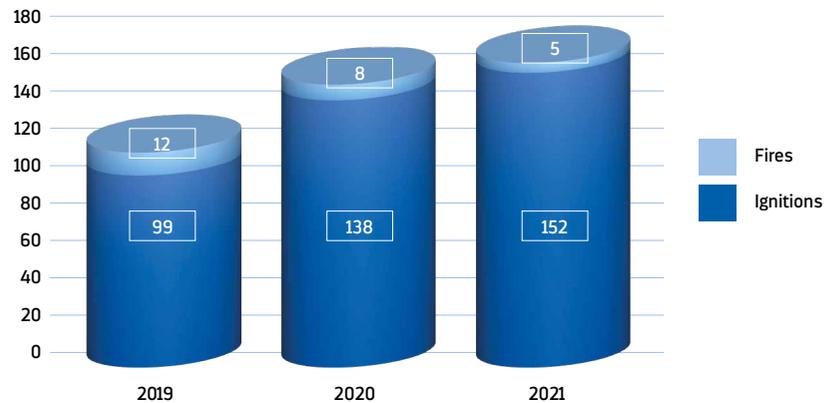
LOST TIME INJURY FREQUENCY IN FINLAND, 2018-2021



SAFETY OBSERVATIONS AT KUUSAKOSKI RECYCLING, 2019-2021



FIRES AND IGNITIONS AT KUUSAKOSKI RECYCLING, 2019-2021



RESPONSIBILITY FOR EMPLOYEES – WE WORK RESPONSIBLY TOGETHER

**THE BEST CUSTOMER EXPERIENCE
IN THE INDUSTRY IS DELIVERED BY
KUUSAKOSKI'S PROFESSIONAL, HEALTHY
AND RESPONSIBLE EMPLOYEES.**



The relevance of our work and a common understanding of where Kuusakoski is going in the future are our strengths. We systematically invest in continuously improving wellbeing at work, occupational safety, organisational development and supervisory work.

To achieve self-management in the workplace, employees must first have strong guidance as a group. At Kuusakoski, our strategy is developed and implemented together with employees. To help understand our common direction, a platform for dialogue has been created in the form of a strategy game. This involves each Kuusakoski employee in understanding the company's goals and customer experience issues, as well as considering their own and the company's development.

Kuusakoski has 410 employees in Finland (74% male, 26% female at the end of 2021). In addition, we use subcontractors and temporary staff.

Employees at Kuusakoski enjoy good health and job satisfaction. Employees are committed and have long careers with the company, on average 12.8 years. The average length of careers among

female employees is 11.3 years and 13.3 among male employees. The employee turnover rate in 2021 was 4%.

At the end of the year under review, we conducted a comprehensive employee survey to find out how our employees were doing and how we had coped as a company during the exceptional coronavirus pandemic. The previous employee survey was conducted in December 2019. The results of the new survey were excellent. The average rating for the claims presented in the survey on a scale of 1 to 5 was 4, representing an improvement of 0.2 points compared to the previous survey. The response rate to the employee survey was 77%. Strengths that were identified included recognition that meaningful work is being done in our company (4.7) and that it is easy to work with their immediate supervisors (4.5).

The biggest positive changes were in the experience of equality and in the common understanding of the company's direction. In the future, we will invest even more in developing the organisation by involving employees. When asked how likely they

would recommend Kuusakoski as an employer to a friend or colleague, the resulting Employer Net Promoter Score (eNPS) was an excellent 36.

As a family business, Kuusakoski has always taken care of its employees in many ways. Annual employee development discussions cover issues such as the basic task and goals of each employee, successes, performance, strengths, wellbeing at work, life situations and expectations. Development discussions were held in spring 2021 among 97% of all employees, and follow-up discussions were held in the autumn among 95% of employees.

Various flexible working time arrangements aim to facilitate a healthy balance between work and family life, taking into account the nature of each task. The company's HR and Training Policy outlines the principles for using different forms of employment, for example, in the event that reduced working hours are required due to family relationships. The policy is reviewed annually with shop stewards. In 2021, 19 Kuusakoski employees in Finland took family leave: 15 male and four female employees.

We promote equality

We comply with operating models for equality and non-discrimination in all our functions and tasks. We update our Equality Policy annually together with our shop stewards. The Equality

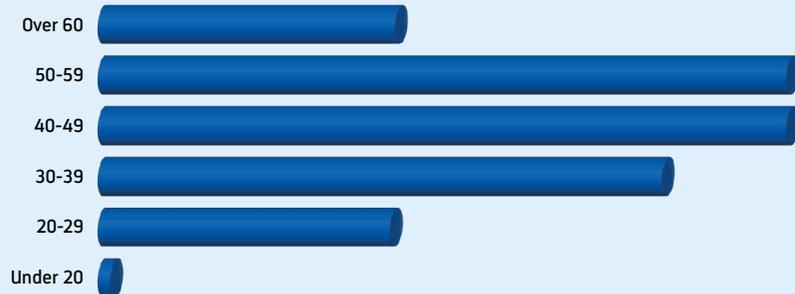
31.12.2021	MALES		FEMALES		TOGETHER	
	#	%	#	%	#	%
Wage employees	180	85	32	15	212	52
Salaried employees	47	51	45	49	92	22
Upper salaried employees	78	74	28	26	106	26
All employees	305	74	105	26	410	100



GENDER DISTRIBUTION AMONG DIFFERENT TASKS



AGE DISTRIBUTION AMONG ALL EMPLOYEES



Policy also includes a Non-Discrimination Policy. Our employee survey helps us monitor the opinion of employees regarding how these policies are implemented in practice.

We also focus with shop stewards on maintaining reward systems. Equal work is rewarded in accordance with the demands of the task, the employee's work success and the goals achieved at work. We have had excellent success in achieving equal pay.

Employee benefits are offered to all employees according to the same principles, regardless of the form of employment.

Skills accelerate development

Skilled employees who value the expertise of others help guarantee Kuusakoski's success. We want everyone at Kuusakoski to succeed in their work. During 2021, special emphasis was placed on the development of supervisory work and management. Each month, supervisors participated in the Supervisors Forum, the themes of which included the annual clock in human resource management, our strategy and other current issues. We also coach new supervisors through a broader training programme, in which 19 employees participated in 2021. The skills of all employees are also developed through joint events held monthly on Teams, where current issues can be discussed together. In autumn 2021,

	WAGE EMPLOYEES	SALARIED EMPLOYEES	UPPER SALARIED EMPLOYEES	TOGETHER
Training hours, total	936	680	629	2,245
Training days *(1 training day = 6 hours of training)	156	113	105	374
Training hours per person	4.4	7.4	5.9	5.5
Training days per person	0.7	1.2	1	0.9

In addition to these, monthly events for all employees and supervisor forums were held but not reported in 2021.

NEW RECRUITMENTS IN 2021 AGE	WAGE EMPLOYEES	SALARIED EMPLOYEES	UPPER SALARIED EMPLOYEES	TOGETHER
Under 20 years of age	11	1		12
20-29	22	11	2	35
30-39	7	3	4	14
40-49	5	2	6	13
50-59	10		3	13
Over 60	2	2	1	5
Together	57	19	16	92

Includes all employment relationships, including summer workers.

we also strengthened our interaction skills by providing facilitation coaching for 20 employees. In addition, 137 employees completed occupational safety card training.

We encourage internal job and career rotation. Several Kuusakoski employees seize this opportunity each year. Rapid increases in the organisation's expertise, especially with regard to new skill needs, are achieved through recruitment.

Employees participate in developing the company

Kuusakoski recognises that the best ideas for developing operations come from employees, who actively propose development, safety and energy conservation ideas. The entire process was made transparent in the second half of 2020, and during 2021 our Initiative Committee processed the highest number of employee ideas in years, altogether 205.

Creating and maintaining open interactions with stakeholders is the foundation of sustainability for a traditional family business. One of the most important tasks of stakeholder cooperation is to jointly identify areas for development and opportunities that will have a positive impact on society, the environment and people. Active dialogue and collaboration are key to this, and working together with stakeholders is part of Kuusakoski's day-to-day business. Kuusakoski is active in industry organisations and networks and also participates in events and working groups. Kuusakoski communicates its operations and plans to stakeholders in accordance with annual plans. Stakeholder expectations and satisfaction are regularly monitored through stakeholder feedback, customer satisfaction and wellbeing at work surveys combined with continuous media monitoring and brand surveys.

Issues considered important among stakeholders guide Kuusakoski's Sustainability Programme, which was developed in 2021. When creating this programme, Kuusakoski conducted an internal review of its stakeholder work and its development needs. The review was conducted on the basis of a stakeholder analysis, and three groups of stakeholders identified as key to the business were selected as its priorities: sales and sourcing customers, employees and sub-contractors, and other suppliers of services and products. The review examined how Kuusakoski works with these key stakeholders in our day-to-day business and how our sustainability goals are reflected in this work. Based on the results of the stakeholder review, Kuusakoski will further deepen its cooperation with key stakeholders.

Kuusakoski is also developing the sustainability of the entire recycling industry by enabling collaboration among several stakeholders with the aim of finding new solutions and innovations to meet sustainability challenges. Kuusakoski is working on several research and development projects at its own research centre and in numerous joint projects with customers, authorities and other stakeholders. Kuusakoski actively highlights in its stakeholder work the targets and measures for promoting the energy and material efficiency of its own operations. Emissions calculations and reporting are continuously developed to meet the needs of customers and other partners. Carbon footprint verification and comparability play a key role. In order to raise the concerns of various stakeholders, an anonymous whistleblowing channel open to everyone was introduced in Kuusakoski in 2021.

As part of our stakeholder cooperation, Kuusakoski participates in the activities and working groups of various interest groups. Our purpose is to promote the circular economy and the operating conditions of recyclers, for example by producing facts and impact assessments and communicating objective information openly to support decision-makers in industry and society.

Kuusakoski and local communities

Kuusakoski's recycling operations take care of society's waste, but these activities also cause emissions. An important part of Kuusakoski's environmental sustainability is to know the environmental impact of our operations and the entire value chain. Kuusakoski always operates in accordance with laws, rules and regulations. All sites have an environmental permit that defines measures to reduce emissions and environmental impacts. Discussions with municipal decision-makers, authorities, neighbours and other stakeholders are an important part of Kuusakoski's local outreach in order to take environmental aspects into account and develop operations.

All local interactions are guided by Kuusakoski's values, our Code of Conduct and the goals derived from our Sustainability Programme. Kuusakoski has been operating in many places for decades. This has been made possible by maintaining an open dialogue and a responsible recycling business, taking into account both the environment and safety.

In Finland, for example, Kuusakoski is a nationwide operator with more than 20 locations. An extensive service network guarantees good access to recycling services even for customers outside larger cities. Locally, Kuusakoski is an important employer, business partner and taxpayer, promoting regional economic development and wellbeing.

Kuusakoski supports the local community and working together in many ways:

- By organising discussion and information events, as well as site visits for local residents, school children and businesses.
- By communicating the opportunities and importance of recycling through various campaigns, such as the Scrap Rally in Finland (read more on page 31) and our recycling campaign in Estonia (page 8).
- By supporting vocational education for persons with disabilities, such as at Kuusakoski US Plainfield (read more on page 27).
- By offering summer jobs for local young people.
- By donating to charities and working together with organisations. For example, the Rafael Kuusakoski Memorial Fund awards grants especially to young researchers and academic research focusing on birds and other biota, the marine environment, climate and landscape of the Baltic Sea and its archipelago.

Public sector and sponsorship

Kuusakoski's sponsorship decisions are based on clearly defined criteria and are directed towards targets that promote recycling, our corporate image, responsibility and sustainable development. The company also makes discretionary donations for the common good as a responsible corporate citizen. These donations are approved by the Management Board or the Board of Directors. Grants and donations in 2021 amounted to approximately EUR 35,000.

The regulation of Kuusakoski's business environment is developing and renewing at a rapid pace. In particular, several current legislative packages in the European Union contain elements that affect the recycling business and the entire order supply chain. Kuusakoski participates in the work of national and regional industrial organisations with the aim of transparently producing fact-based information and techno-economic

impact assessments as a basis for legislative work. Our goals are an open operating environment and a competitive environment based on common playing rules.

Kuusakoski does not conduct direct political influence or participate in or otherwise support political activities, whether local, national or international. The company does not make donations to political parties or groups, either directly or indirectly.





FINANCIAL RESPONSIBILITY

DISTRIBUTION OF FINANCIAL ADDED VALUE BY STAKEHOLDER GROUP, M€ KUUSAKOSKI GROUP

STAKEHOLDER GROUP	SOURCES OF ADDED VALUE	719.5
Customers	Sales, income and financial income	
	DISTRIBUTION OF ADDED VALUE	694.7
Suppliers of goods and services	Purchased goods and services, investment assets and paid rents	600.7
Employees	Salaries, wages, social security and pension contributions	75.1
Financiers	Financial expenses	3.1
Public sector	Taxes	7.9
Shareholders	Dividends	7.8
Communities	Donations, sponsorship and public interest support	0.1
	BUSINESS DEVELOPMENT	24.8

Managing sustainability and compliance

Key principles and reporting are discussed by the Group's Board of Directors and Management Team. The Sustainability function is managed by the Chief Sustainability Officer, who is in charge of corporate sustainability and public relations and is a member of the Group Management Team. The Chief Sustainability Officer is responsible for developing and implementing a business-oriented sustainability strategy. A sustainable development network, supported by steering groups, is responsible for developing, coordinating and reporting on sustainability work. The management of the business sectors is responsible for implementing practical measures.

Compliance is a vital aspect of Kuusakoski's operations, and the operating model reinforces a compliant approach in terms of compliance with laws, rules and regulations. The basis and core of the operating model is our Code of Conduct and ethical guidelines. Identifying responsibility and compliance risks is part of the Group-wide risk management process. These risks are related to combating corruption and bribery, competition law,

data protection and consumer protection, which can have significant negative consequences for our business, including serious financial or reputational risks.

In 2021, Kuusakoski had no cases related to breaches of competition law, corruption, bribery, data protection or consumer protection. Based on the risk assessment and supply chain analysis, our operations do not cause any negative effects within the value chain. We have not observed or received any reports or statements regarding discrimination, human rights, the use of child labour or forced labour. Our operations and sourcing are based in low-risk areas.

Occupational health and safety, environmental and quality management systems

At Kuusakoski, activities related to occupational health and safety, the environment and quality are managed on the basis of international management system standards and local material-specific standards. Our quality, environmental and occupational health and safety management systems

have been certified by an external partner and cover 48-78% of employees (ISO 9001 65%, ISO 14001 78% and ISO 45001 48%). Kuusakoski locations that do not have certifications comply with the principles of these management systems.

In addition to international management system standards, Kuusakoski also complies with the ISO 17025 standard for fuel analysis (Kuusakoski Research Centre, Finland), CERUB certification for sustainably recycled tyre material (Finland) and the e-Stewards standard for ethical and responsible reuse, recycling, and disposition of electronic equipment and information technology (USA).

Kuusakoski employs occupational health and safety, environmental and quality professionals in all the countries it operates in. These experts are responsible for coordinating and developing the relevant systems within their own countries, as well as for collecting and compiling the information needed for reporting. The key figures related to these systems are reported to Kuusakoski's management on a monthly basis.

Sustainability reporting in accordance with the Global Reporting Initiative

This is the first Kuusakoski sustainability report to be implemented in accordance with the Global Reporting Initiative (GRI). The report is based on an internal materiality assessment, and sustainability information has not been verified by an external party. The report is an integrated Kuusakoski Recycling Sustainability Report and covers the reporting period 11.2021-31.12.2021 with reference to GRI. The reported figures generally include all production operations of the Kuusakoski recycling business group. If the coverage deviates from the definition or is narrower, it is reported in the GRI index table for that indicator. •

GRI CONTENT INDEX 2021

Statement of use

Kuusakoski has reported the information cited in this GRI content index for the period 1.1.2021-31.12.2021 with reference to the GRI Standards.

GRI used: GRI 1: Foundation 2021

GRI STANDARD	DISCLOSURE	LOCATION OF DISCLOSURE REPORT
GRI 2: General Disclosures 2021	2-1 Organizational details	Contact Information p. 66-67, Report of the Board of Directors p. 34-35
GRI 2: General Disclosures 2021	2-2 Entities included in the organization's sustainability reporting	Sustainability reporting in accordance with the Global Reporting Initiative p. 55
GRI 2: General Disclosures 2021	2-3 Reporting period, frequency and contact point	Accounting Principles p. 59 Contact Information p. 66
GRI 2: General Disclosures 2021	2-4 Restatements of information	Sustainability reporting in accordance with the Global Reporting Initiative p. 55, no restatements
GRI 2: General Disclosures 2021	2-5 External assurance	Sustainability reporting in accordance with the Global Reporting Initiative p. 55, no confirmation
GRI 2: General Disclosures 2021	2-6 Activities, value chain and other business relationships	Group Companies and Associated Companies p. 63, Report of the Board of Directors p. 34-35
GRI 2: General Disclosures 2021	2-7 Employees	Report of the Board of Directors p. 34-35, Responsibility for Employees p. 52-53, 2-7-a: Total number of employees reported regional-ly Finland and Outside Finland, not reported by country, not reported by gender distribution 2-7-b: Partially reported; only for Kuusakoski Recycling operations in Finland, 2-7-d and e: Not reported
GRI 2: General Disclosures 2021	2-9 Governance structure and composition	Board of Directors, Management and Auditor p. 65, 2-9-c: Not reported
GRI 2: General Disclosures 2021	2-11 Chair of the highest governance body	Board of Directors, Management and Auditor p. 65
GRI 2: General Disclosures 2021	2-26 Mechanisms for seeking advice and raising concerns	Managing responsibility and compliance p. 55, Kuusakoski and Stakeholders p. 54, Supplier responsibility for logistics p. 49
GRI 3: Material Topics 2021	3-1 Process to determine material topics	Sustainability reporting in accordance with the Global Reporting Initiative p. 56, internal materiality assessment, R&D, environmental protection, and occupational health and safety p. 37, Sustainability programme p. 40-41
GRI 3: Material Topics 2021	3-2 List of material topics	Sustainability programme p. 40-41
GRI 201: Economic Performance 2016	201-1 Direct economic value generated and distributed	Financial Responsibility, p. 55
GRI 205: Anti-corruption 2016	205-2 Communication and training about anti-corruption policies and procedures	Managing sustainability and compliance p. 55, Kuusakoski and Stakeholders p. 54, Supplier responsibility for logistics p. 49
GRI 205: Anti-corruption 2016	205-3 Confirmed incidents of corruption and actions taken	Managing sustainability and compliance p. 55
GRI 206: Anti-competitive Behaviour 2016	206-1 Legal actions for anti-competitive behavior, anti-trust, and monopoly practices	Managing sustainability and compliance p. 56
GRI 301: Materials 2016	301-1 Materials used by weight or volume	Material and Energy Efficiency, p. 47
GRI 301: Materials 2016	301-2 Recycled input materials used	Material and Energy Efficiency, p. 47
GRI 302: Energy 2016	302-1 Energy consumption within the organization	Material and Energy Efficiency, p. 47
GRI 303: Water and Effluents 2018	303-3 Water withdrawal	Material and Energy Efficiency, p. 47
GRI 303: Water and Effluents 2018	303-4 Water discharge	Material and Energy Efficiency, p. 47
GRI 303: Water and Effluents 2018	303-5 Water consumption	Material and Energy Efficiency, p. 47
GRI 304: Biodiversity 2016	304-1 Operational sites owned, leased, managed in, or adjacent to, protected areas and areas of high biodiversity value outside protected areas	Environment, p. 46
GRI 304: Biodiversity 2016	304-2 Significant impacts of activities, products and services on biodiversity	Environment, p. 46
GRI 304: Biodiversity 2016	304-4 IUCN Red List species and national conservation list species with habitats in areas affected by operations	Environment, p. 46

GRI STANDARD	DISCLOSURE	LOCATION OF DISCLOSURE REPORT
GRI 305: Emissions 2016	305-1 Direct (Scope 1) GHG emissions	Material and Energy Efficiency, p. 47-48
GRI 305: Emissions 2016	305-2 Energy indirect (Scope 2) GHG emissions	Material and Energy Efficiency, p. 47-48
GRI 305: Emissions 2016	305-3 Other indirect (Scope 3) GHG emissions	Material and Energy Efficiency, p. 48, Sustainable Supply Chain Management, p. 49
GRI 305: Emissions 2016	305-4 GHG emissions intensity	Material and Energy Efficiency, p. 48
GRI 306: Waste 2020	306-1 Waste generation and significant waste-related impacts	Reject plant minimises waste streams, p. 15; Our products and services – implementing the circular economy in practice, p. 41-43; Environment, p. 46; Material and Energy Efficiency, p. 47
GRI 306: Waste 2020	306-2 Management of significant waste-related impacts	Reject plant minimises waste streams, p. 15; Our products and services – implementing the circular economy in practice, p. 41-43; Environment, p. 46; Material and Energy Efficiency, p. 47
GRI 306: Waste 2020	306-3 Waste generated	Material and Energy Efficiency, p. 47
GRI 306: Waste 2020	306-4 Waste diverted from disposal	Material Balance Sheet, Products, p. 47
GRI 306: Waste 2020	306-5 Waste directed to disposal	Material Balance Sheet, Waste, p. 47
GRI 401: Employment 2016	401-1 New employee hires and employee turnover	Responsibility for Employees, p. 52
GRI 401: Employment 2016	401-2 Benefits provided to full-time employees that are not provided to temporary or part-time employees	We promote equality, p. 53
GRI 401: Employment 2016	401-3 Parental leave	Responsibility for Employees, p. 52
GRI 403: Occupational Health and Safety 2018	403-1 Occupational health and safety management system	Occupational Health and Safety, p. 50
GRI 403: Occupational Health and Safety 2018	403-2 Hazard identification, risk assessment, and incident investigation	Occupational Health and Safety, p. 50
GRI 403: Occupational Health and Safety 2018	403-3 Occupational health services	Occupational Health and Safety, p. 50
GRI 403: Occupational Health and Safety 2018	403-4 Worker participation, consultation, and communication on occupational health and safety	Occupational Health and Safety, p. 50
GRI 403: Occupational Health and Safety 2018	403-5 Worker training on occupational health and safety	Occupational Health and Safety, p. 50-51
GRI 403: Occupational Health and Safety 2018	403-6 Promotion of worker health	Occupational Health and Safety, p. 50-51
GRI 403: Occupational Health and Safety 2018	403-8 Workers covered by an occupational health and safety management system	Financial Responsibility, p. 55
GRI 403: Occupational Health and Safety 2018	403-9 Work-related injuries	Occupational Health and Safety, p. 51
GRI 403: Occupational Health and Safety 2018	403-10 Work-related ill health	Occupational Health and Safety, p. 50
GRI 404: Training and Education 2016	404-1 Average hours of training per year per employee	Responsibility for Employees, p. 53
GRI 404: Training and Education 2016	404-3 Percentage of employees receiving regular performance and career development reviews	Responsibility for Employees, p. 52
GRI 405: Diversity and Equal Opportunity 2016	405-1 Diversity of governance bodies and employees	We promote equality, p. 52-53
GRI 406: Non-discrimination 2016	406-1 Incidents of discrimination and corrective actions taken	Managing responsibility and compliance p. 55, no incidents of discrimination
GRI 408: Child Labour 2016	408-1 Operations and suppliers at significant risk for incidents of child labor	Managing responsibility and compliance p. 55, no incidents or identified risks of child labour in the supply chain
GRI 409: Forced or Compulsory Labor 2016	409-1 Operations and suppliers at significant risk for incidents of forced or compulsory labor	Managing responsibility and compliance p. 55, no incidents or identified risks of compulsory labor in the supply chain
GRI 415: Public Policy 2016	415-1 Political contributions	Kuusakoski and Stakeholders, Public sector and sponsorship, p. 54
GRI 418: Customer Privacy 2016	418-1 Substantiated complaints concerning breaches of customer privacy and losses of customer data	Financial Responsibility, p. 55



The Rafael Kuusakoski Memorial Fund, which operates under the Finnish Foundation for Nature Conservation, awards grants especially to young researchers and academic research focusing on birds and other biota, the marine environment, climate and landscape of the Baltic Sea and its archipelago.



ACCOUNTING PRINCIPLES

Consolidated Financial Statements

The consolidated financial statements and those of the parent company Kuusakoski Group Oy have been prepared in accordance with the Finnish Accounting Act.

The consolidated financial statements include the parent company, as well as companies in which the parent company directly or indirectly held more than 50 percent of the voting rights at the end of the financial year or in which the parent company has the power to exercise control.

All inter-company receivables and liabilities, internal margins and the effects of other internal transactions have been eliminated. Share ownership has been eliminated using the acquisition cost method. The difference between the acquisition cost and the equity of subsidiary companies at the time of acquisition is presented as goodwill. Goodwill is depreciated on a straight-line basis over 5 years.

Minority interests are separated from the Group's result and shareholders' equity and presented as separate items in the consolidated income statement and balance sheet.

The financial information of associated companies is included in the consolidated financial statements using the equity method. The Group's share of the results in associated companies is presented in the financial items. Similarly, the Group's share of the shareholders' equity of associated companies is presented in the balance sheet as the value of the shares and any possible goodwill. Associated companies are companies in which the parent company held 20 to 50 percent of the voting rights at the end of the financial year.

Revenue Recognition

Revenue from sales of products and services is reported as net sales adjusted for indirect taxes, discounts and exchange rate differences on foreign currency sales. The recycling group sells recycled metal and other recycled materials and offers various recycling services to its customers. Income from material sales is recorded when the product is delivered to the customer under the terms of delivery and the risks and benefits associated with it have been transferred to the recipient. Revenue from services is recognised when the service has been performed.

The foundry group sells aluminium castings to its customers, as well as the tools used to manufacture their products. Income from product sales is recorded when the product is delivered to the customer under the terms of delivery. Income from tool projects is recorded on a billing basis in accordance with the terms of the customer agreement. Specific margins for projects are recognised at the end of each project. Anticipated losses from non-profitable projects are recognised as an expense in their entirety.

Foreign Currency Items

Foreign currency receivables, liabilities and commitments are valued according to the European Central Bank's average exchange rates on the closing date. Currency derivatives are valued at market value on the closing date, and profits and losses are charged to the appropriate items in the income statement.

The balance sheets of non-Finnish subsidiaries are translated into euros at the average exchange rate on the closing date and their income statement at the average of the monthly average exchange rates for the financial year. Exchange rate differences arising from translating shareholders' equity are presented in retained earnings.

Research and Development Costs

Research and development costs are charged to the income statement as annual costs.

Inventories

Inventories are presented in the balance sheet at the lower of cost or net realisable value; they are calculated using the FIFO method as the amount of the variable costs arising from acquisition and manufacturing, or the probable sales price. In addition to variable costs, the value of inventories includes fixed costs arising from acquisition and manufacturing.

Fixed Assets and Depreciation

The balance sheet values of tangible and intangible fixed assets are based on their original acquisition costs, less accumulated depreciation. The acquisition

cost of assets manufactured by the company includes variable manufacturing costs.

Straight-line depreciation is made according to the plan for depreciation, which is based on the estimated useful economic life of the assets.

Estimated useful economic life of fixed assets:

Intangible assets	3–5 years
Goodwill	5–10 years
Other long-term expenditure	5 years
Buildings and structures	10–30 years
Machinery and equipment	5–12 years
Other tangible assets	5–20 years

The reducing balance method according to the Finnish Business Income Tax Act is applied to the straight-line depreciation of Kivikolmio Oy.

Financial Assets

Financial assets are valued according to their acquisition cost or the probable sales price.

Pension Arrangements

Pension costs for Group companies outside Finland are calculated in accordance with local legislation and practice and recorded in the consolidated financial statements. Pension obligations for Group personnel in Finland are covered through payments to pension insurance institutions.

Deferred Taxes

Deferred tax liabilities and assets in the consolidated financial statements are calculated for temporary differences between the tax basis of assets and liabilities and their carrying amounts for financial reporting purposes using the official tax rate confirmed on the balance sheet date for the following financial periods.

Taxation requirements in Finland and certain other countries allow companies to reduce or increase their taxable income through appropriations. Any increase or reduction in these is recorded in the income statement as a change in appropriations, with the counter-entry in the balance sheet appropriations. In the consolidated financial statements, appropriations are divided between the result for the year, accumulated reserves and deferred tax liability.

Recognition and Measurement of Derivative Instruments

Derivative instruments include currency options, forward foreign exchange contracts, interest rate swaps and commodity derivatives as part of an overall risk management policy. Currency options and forward foreign exchange contracts are used to reduce anticipated foreign currency risks related to sales and purchases. Derivatives are valued at market value on the closing date, and their changes in value are recorded in the income statement. The change in value of electricity derivatives is recorded only in the notes to the consolidated financial statements.

Environmental Provisions

When acquiring new areas of land, an environmental provision is recorded with mandatory provisions about any possible contaminated soil of which the company is aware.

Kuusakoski Oy's location-specific environmental permit regulations are complied with closely and monitored continuously throughout the financial year. Upcoming environmental investments and any possible soil cleaning provisions for land on which operations are to be discontinued are recorded in the financial statements as mandatory provisions.

AUDITOR'S REPORT

TO THE ANNUAL GENERAL MEETING OF
KUUSAKOSKI GROUP OY

Report on the Audit of Financial Statements

Opinion

We have audited the financial statements of Kuusakoski Group Oy (business identity code 0200662-5) for the year ended 31 December 2021. The financial statements comprise the balance sheets, the income statements, cash flow statements and notes for the group as well as for the parent company.

In our opinion, the financial statements give a true

and fair view of the group's and the company's financial performance and financial position in accordance with the laws and regulations governing the preparation of financial statements in Finland and comply with statutory requirements.

Basis for Opinion

We conducted our audit in accordance with good auditing practice in Finland. Our responsibilities under good auditing practice are further described in the Auditor's Responsibilities for the Audit of Financial Statements section of our report. We are independent of the parent company and of the group companies in accordance with the ethical requirements that are applicable in Finland and are relevant to our audit, and we have fulfilled our other ethical responsibilities in accordance with these requirements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Responsibilities of the Board of Directors and the Managing Director for the Financial Statements

The Board of Directors and the Managing Director are responsible for the preparation of financial statements that give a true and fair view in accordance with the laws and regulations governing the preparation of financial statements in Finland and comply with statutory requirements. The Board of Directors and the Managing Director are also responsible for such internal control as they determine is necessary to enable the preparation of financial statements that are free from material misstatement, whether due to fraud or error.

In preparing the financial statements, the Board of Directors and the Managing Director are responsible for assessing the parent company's and the group's ability to continue as a going concern, disclosing, as applicable, matters relating to going concern and using the going concern basis of accounting. The financial statements are prepared using the going concern basis of accounting unless there is an intention to liquidate the parent company or the group or cease operations, or there is no realistic alternative but to do so.

Auditor's Responsibilities for the Audit of Financial Statements

Our objectives are to obtain reasonable assurance on whether the financial statements as a whole are free from material misstatement, whether due to fraud or error, and to issue an auditor's report that includes our opinion. Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with good auditing practice will always detect a material misstatement when it exists. Misstatements can arise from fraud or error and are considered material if, individually or in aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of the financial statements.

As part of an audit in accordance with good auditing practice, we exercise professional judgment and maintain professional skepticism throughout the audit. We also:

— Identify and assess the risks of material misstatement of the financial statements, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our opinion. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal control.

— Obtain an understanding of internal control relevant to the audit in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the parent company's or the group's internal control.

— Evaluate the appropriateness of accounting policies used and the reasonableness of accounting estimates and related disclosures made by management.

— Conclude on the appropriateness of the Board of Directors' and the Managing Director's use of the going concern basis of accounting and based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the parent company's or the group's ability to continue as a going concern. If we

conclude that a material uncertainty exists, we are required to draw attention in our auditor's report to the related disclosures in the financial statements or, if such disclosures are inadequate, to modify our opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the company to cease to continue as a going concern.

— Evaluate the overall presentation, structure and content of the financial statements, including the disclosures, and whether the financial statements represent the underlying transactions and events so that the financial statements give a true and fair view.

— Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the group to express an opinion on the consolidated financial statements. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinion.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

Other Reporting Requirements

Other Information

The Board of Directors and the Managing Director are responsible for the other information. The other information comprises the report of the Board of Directors. Our opinion on the financial statements does not cover the other information.

In connection with our audit of the financial statements, our responsibility is to read the other information and, in doing so, consider whether the other information is materially inconsistent with the financial statements or our knowledge obtained in the audit, or otherwise appears to be materially misstated. Our responsibility also includes considering whether the report of the Board of Directors has been prepared in accordance with the applicable laws and regulations.

In our opinion, the information in the report of the Board of Directors is consistent with the information in the financial statements and the report of the Board of Directors has been prepared in accordance with the applicable laws and regulations.

If, based on the work we have performed, we conclude that there is a material misstatement in the information included in the report of the Board of Directors, we are required to report this fact. We have nothing to report in this regard.

Other opinions

We support the adoption of the financial statements. The proposal by the Board of Directors regarding the treatment of distributable profit is in compliance with the Limited Liability Companies Act. We support that the Board of Directors of the parent company and the Managing Director be discharged from liability for the financial period audited by us.

Helsinki, 12 April 2022

Ernst & Young Oy
Juha Hilmola,
Authorised Public Accountant

CONSOLIDATED INCOME STATEMENT		
EUR million	2021	2020
Revenues 1)	717.6	486.5
Other operating income 2)	1.9	4.0
Materials and services 3)	513.3	339.9
Personnel expenses 4)	75.1	67.9
Depreciation and write-downs 6)	16.3	17.4
Other operating expenses	63.2	55.4
	667.8	480.6
Operating profit	51.7	9.9
Financial income and expenses 7)	-1.1	-2.4
Profit before taxes	50.5	7.4
Income taxes 8)	-9.2	-2.1
Minority interest	-1.3	-0.5
Net profit for the financial year	40.0	4.8

CONSOLIDATED BALANCE SHEET		
EUR million	2021	2020
ASSETS		
Non-current assets 9)		
Intangible assets	3.6	2.5
Tangible assets	114.5	110.6
Investments	6.4	5.0
	124.5	118.1
Current assets		
Inventories 10)	85.8	58.0
Long-term receivables	0.1	0.0
Short-term receivables 11)	73.2	53.5
Cash and cash equivalents	45.8	46.0
	204.9	157.5
	329.4	275.6
SHAREHOLDERS' EQUITY AND LIABILITIES		
Equity and reserves 12)		
Share capital	0.1	0.1
Share premium fund	0.2	0.2
Retained earnings	113.9	114.0
Net profit for the financial year	40.0	4.8
	154.2	119.2
Minority interest	1.9	1.0
Obligatory provisions 13)	10.6	13.4
Liabilities 14)		
Non-current liabilities	50.8	56.1
Current liabilities	111.9	85.8
	162.7	142.0
	329.4	275.6



CONSOLIDATED STATEMENT OF CHANGES IN FINANCIAL POSITION		
EUR million	2021	2020
Cash flow from operations		
Profit (loss) before appropriations and taxes	50.5	7.4
Adjustments:		
Depreciation and write-downs	16.3	17.4
Gains (-) and losses (+) on fixed assets	0.2	-2.4
Share of results of associated companies, gains (-) and losses (+)	-1.8	-1.3
Unrealised exchange rate profits and losses	0.2	-0.2
Financial income and expenses	3.0	3.8
Cash flow before change in working capital	68.4	24.9
Change in working capital		
Increase (-), decrease (+) in inventories	-26.5	-1.0
Increase (+), decrease (-) in non-interest-bearing trade receivables	-19.2	0.3
Increase (+), decrease (-) in non-interest-bearing liabilities	14.7	11.1
Cash flow from operations before financial items and taxes	37.4	35.3
Interest paid and other financial expenses		
Dividends received	0.4	0.2
Interest received	0.3	0.0
Taxes	-1.8	0.1
Cash flow from operations	32.8	31.9
Cash flow from investments		
Investments in tangible and intangible assets	-19.6	-9.3
Sold shares in subsidiaries	0.8	1.9
Cash flow from investments	-18.8	-7.4
Cash flow from financing		
Increase (+), decrease (-) in non-current liabilities	-3.2	-4.5
Increase (+), decrease (-) in current liabilities	-3.6	-8.5
Dividend distribution	-7.8	-3.8
Cash flow from financing	-14.5	-16.8
Change in cash and cash equivalents	-0.5	7.7
Cash and cash equivalents 1 Jan	46.0	38.4
Effect of exchange rate changes	0.3	-0.1
Cash and cash equivalents 31 Dec	45.8	46.0

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS		
EUR million	2021	2020
INCOME STATEMENT		
1. Revenues by business sector and market area		
Revenues by business sector		
Recycling	621.6	411.8
Foundries	96.0	74.6
Total	717.6	486.5
Revenues by market area		
Finland	175.2	102.2
Other Europe	368.2	246.3
Asia	149.2	119.2
Other areas	25.0	18.8
Total	717.6	486.5
2. Other operating income		
Gains on sale of fixed assets	0.3	2.5
Other operating income	1.6	1.6
Total	1.9	4.0
3. Materials and services		
Materials, goods and supplies		
Purchased during the financial year	442.8	260.2
Increase (-), decrease (+) in inventories	-26.9	-11
	415.9	2591
Outside services	974	80.8
Total	513.3	339.9
4. Personnel expenses		
Wages and salaries	63.6	58.2
Pension expenses	6.2	5.1
Other personnel expenses	5.3	4.6
Total	75.1	67.9
Salaries and remuneration to senior management		
Managing Directors and Members of the Board of Directors	2.9	2.6
Group management had no loans from the parent company.		
Average number of personnel		
Wage earners	1,282	1,370
Salaried employees	532	564
Total	1,814	1,934
5. Auditor's fees		
Auditing	0.3	0.3
Other services	0.1	0.0
Total	0.4	0.4

6. Depreciation and write-downs		
Planned depreciation, intangible	0.5	0.5
Planned depreciation, goodwill	0.0	0.3
Planned depreciation, tangible	15.7	15.9
Write-downs	0.1	0.7
Total	16.3	17.4
7. Financial income and expenses		
Income from associated companies	1.8	1.3
Other interest and financial income, from others	0.2	0.6
Other interest and financial expenses, to others	3.1	4.3
Total financial expenses and expenses	-1.1	-2.4
Foreign currency exchange differences included in total financial income and expenses	0.3	-0.4
8. Income taxes		
Income taxes payable from current and previous tax years	7.3	1.6
Change in deferred tax liability	1.8	0.4
Other direct taxes	0.1	0.0
	9.2	2.1

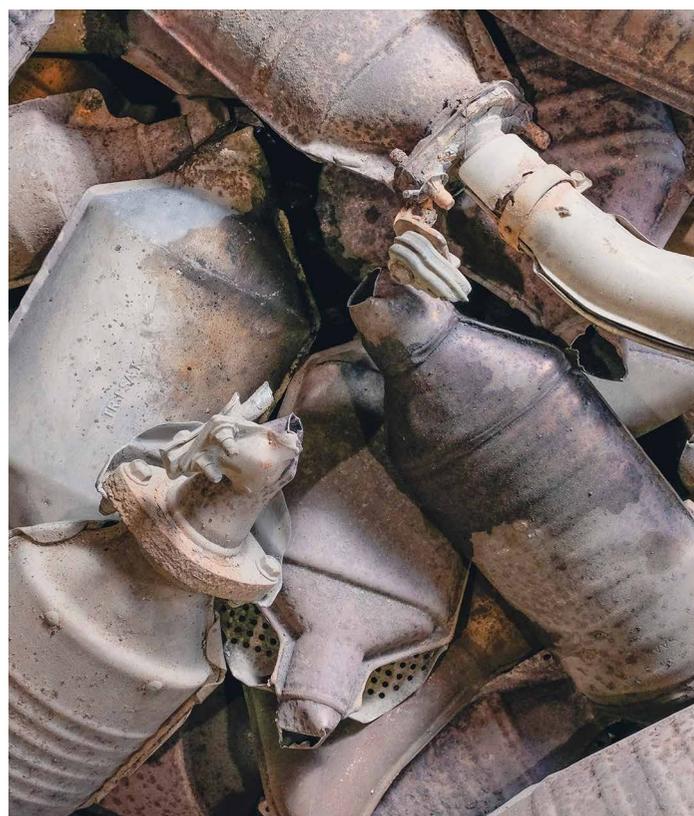


NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS											
EUR million											
BALANCE SHEET, ASSETS											
9. Non-current assets											
	Acquisition cost 1 Jan 2021	Translation difference	Increases	Decreases	Re-classifications	Accumulated depreciation 1 Jan 2021	Translation adjustment	Accumulated depreciation on decreases	Depreciation for the financial year	Write-downs	Total 31 Dec 2021
Intangible assets											
Intangible rights	2.3	0.0	0.0	0.0	0.0	-1.3	0.0	0.0	0.0	0.0	1.0
Goodwill	54.0	0.8	0.0	0.0	0.0	54.0	-0.8	0.0	0.0	0.0	0.0
Other intangible assets	15.7	0.1	1.3	0.0	0.3	-14.3	-0.1	0.0	-0.5	0.0	2.5
Capital work in progress	0.1	0.0	0.2	0.0	-0.3	0.0	0.0	0.0	0.0	0.0	0.0
Total intangible assets	72.0	0.9	1.5	0.0	0.1	69.6	-0.8	0.0	-0.5	0.0	3.6
Tangible assets											
Land	7.7	0.1	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	8.5
Buildings and structures	107.8	2.3	1.3	-0.7	2.3	-59.6	-1.7	0.7	-3.8	0.0	48.6
Machinery and equipment	228.4	6.5	3.7	-7.9	6.2	-179.9	-5.4	7.5	-11.5	-0.1	47.6
Other tangible assets	6.4	0.4	0.2	-0.1	0.0	-4.9	-0.3	0.1	-0.4	0.0	1.3
Capital work in progress	4.0	0.0	13.2	-0.1	-8.6	0.0	0.0	0.0	0.0	0.0	8.5
Total tangible assets	354.2	9.3	18.4	-8.7	-0.1	-243.6	-7.4	8.3	-15.7	-0.1	114.5
Investments											
Shares in associated companies	4.8	-0.6	1.4	0.0	0.6	0.0	0.0	0.0	0.0	0.0	6.3
Other shares and shareholdings	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total investments	5.0	-0.6	1.4	0.0	0.6	0.0	0.0	0.0	0.0	0.0	6.4
Total non-current assets	431.3	9.6	21.3	-8.7	0.6	313.2	-8.2	8.3	-16.2	-0.1	124.5

EUR million	2021	2020
10. Inventories		
Materials and supplies	58.4	34.1
Finished goods	27.1	23.4
Advance payments	0.2	0.5
	85.8	58.0
11. Current receivables		
Long-term receivables		
Deferred tax liabilities	0.1	0.0
Short-term receivables		
Deferred tax liabilities	2.8	3.3
Trade receivables	63.6	43.7
Other receivables	2.6	2.3
Accrued income	4.2	4.0
	73.2	53.5
BALANCE SHEET, ASSETS		
12. Shareholders' equity		
Share capital	0.1	0.1
Share premium fund	0.2	0.2
	0.3	0.3
Retained earnings 1 Jan	118.9	118.0
Dividends paid	-7.2	-3.3
Translation adjustment	2.2	-0.7

EUR million	2021	2020
Retained earnings 31 Dec	113.9	114.0
Net profit for the financial year	40.0	4.8
Total retained earnings	153.9	118.9
Total	154.2	119.2
13. Provisions		
Environmental provisions	7.3	7.3
Other provisions	3.3	6.1
Total	10.6	13.4
14. Liabilities		
Non-current liabilities		
Loans from financial institutions	46.2	52.7
Deferred tax liabilities	4.5	3.2
Other non-current liabilities	0.0	0.3
Total non-current liabilities	50.8	56.1
Current liabilities		
Loans from financial institutions	16.4	16.7
Advances received	1.7	0.8
Trade payables	55.1	41.1
Other current liabilities	8.3	6.7
Accrued expenses	29.7	20.0
Deferred tax liabilities	0.6	0.5
Total current liabilities	111.9	85.8

EUR million	2021	2020
Main items in accrued expenses		
Accrued personnel expenses	10.6	8.6
Taxes	6.0	0.4
Accrued financial expenses	0.2	0.5
Other	12.9	10.5
	29.7	20.0
OTHER NOTES		
15. Collateral given		
Liabilities for which collateral given		
Loans from financial institutions	2.9	3.4
Mortgages given as collateral		
Business mortgages	0.0	0.0
Book value of pledged shares	0.5	0.5
16. Contingent liabilities		
Leasing and rental liabilities		
Payable within one year	7.9	7.5
Payable after one year	18.8	19.7
Total leasing and rental liabilities	26.8	27.2
Guarantees given on behalf of companies belonging to the same group	11.5	10.2
Other guarantees	5.2	4.9
Total contingent liabilities	43.5	42.3
17. Derivative instruments		
Open derivative instruments 31 Dec 2021		
Forward foreign exchange contracts		
Fair value	0.4	0.2
Contract amounts	32.5	29.8
Change in value marked to the Income Statement	0.2	0.0
Electricity derivatives		
Fair value	0.7	-0.1
Contract amounts	0.9	1.6
<p>Forward foreign exchange contracts, currency options and metal options have been made for hedging purposes, and they have been booked for the most part as a gain or loss in the financial statements at their fair value. Exercised and terminated electricity derivatives have been booked in the income statement upon their termination. The values of open agreements are not booked in the balance sheet but are instead listed here. At the end of the financial year the Group had forward foreign exchange contracts and electricity derivatives.</p> <p>All open forward foreign exchange contracts and metal options mature within 12 months. All open electricity derivatives mature within 3 years.</p>		



18. Group holdings in other companies			
	Country	Group Shareholding %	Parent Company Shareholding %
GROUP COMPANIES			
Alteams Oy	Finland	100	100
Alteams Finland Oy	Finland	100	
Jokirantakiinteistöt Oy	Finland	100	100
Kivikolmio Oy	Finland	100	
Kuusakoski Oy	Finland	100	100
Koy Lahden Norokatu 5	Finland	100	100
Revanssi Oy	Finland	51	
Alteams Eesti Oü	Estonia	100	
Alteams Japan K.K.	Japan	100	
Alteams Poland Sp.zo.o	Poland	100	
Alteams Stilexo AB	Sweden	100	
Alteams Suzhou Co. Ltd.	China	100	
Alteams Suzhou Industrial Technology Co. Ltd.	China	100	
Crown Works Ltd	UK	100	
Kuusakoski AS	Estonia	100	
Kuusakoski Glass Recycling LLC	USA	100	
Kuusakoski Inc	USA	100	
Kuusakoski Ltd	UK	100	
Kuusakoski Poland Sp.zo.o	Poland	100	
Kuusakoski Sverige AB	Sweden	100	
Kuusakoski US LLC	USA	100	
SWEEEP Kuusakoski Ltd	UK	61	
Vintage Tech LLC	USA	100	
ASSOCIATED COMPANIES			
Suomen Erityisjäte Oy	Finland	49	
Sähkö-Saarnikannas Oy	Finland	20	
Ashley Alteams India Private Limited	India	50	

KEY FIGURES					
	2021	2020	2019	2018	2017
Group key financial indicators					
Revenues, MEUR	7176	486.5	5175	610.8	571.6
Exports and sales outside Finland, MEUR	542.4	384.3	3981	478.4	440.4
% of revenues	75.6	79.0	76.9	78.3	77.0
Operating profit, MEUR	51.7	9.9	-1.3	11.4	18.2
% of revenues	7.2	2.0	-0.2	1.9	3.2
Net financing expenses (excluding exchange rate differences), MEUR	1.4	2.0	4.8	3.5	2.0
% of revenues	0.2	0.4	0.9	0.6	0.3
Profit before taxes, MEUR	50.5	7.4	-5.8	6.7	11.6
% of revenues	7.0	1.5	-1.1	1.1	2.0
Return on equity (ROE), %	29.0	4.0	-5.6	2.7	7.1
Return on investment (ROI), %	24.3	5.5	-0.7	2.9	3.7
Equity ratio, %	47.6	43.7	42.9	42.8	43.9
Interest-bearing debt, MEUR	67.6	73.4	88.1	91.2	88.2
Net debt, MEUR	21.8	27.4	49.7	39.7	52.8
Net gearing, %	14.0	22.8	41.7	30.8	39.8
Investments, MEUR	19.6	9.3	20.3	17.5	7.8
% of revenues	2.7	1.9	3.9	2.9	1.4
Number of personnel (average)	1,814	1,934	2,095	2,420	2,395
Information per share					
Number of shares	60,000	60,000	60,000	60,000	60,000
Net profit per share, EUR	666.9	80.6	-115.7	58.8	151.7
Equity per share, EUR	2,570.7	1,986.4	1,970.9	2,127.2	2,191.1
Dividend per share, EUR	150.0	120.0	25.0	50.0	100.0
Dividend as % of net profit	22.3	148.9	-21.6	85.0	62.9

PARENT COMPANY INCOME STATEMENT		
EUR million	2021	2020
Revenues	11	11
Other operating income	1.2	0.9
Personnel expenses	0.6	0.6
Depreciation and write-downs	0.0	0.0
Other operating expenses	1.5	1.9
Operating profit	0.3	-0.6
Financial income and expenses	8.8	-1.7
Profit before appropriations and taxes	9.1	-2.2
Group contributions	0.0	0.2
Income taxes	0.1	0.0
Net profit for the financial year	9.0	-2.1

NOTE TO PARENT COMPANY FINANCIAL STATEMENT		
EUR million	2021	2020
Specification of shareholders' equity		
Share capital	0.1	0.1
Share premium fund	0.2	0.2
Retained earnings on 1 Jan	105.5	110.8
Dividends paid	-7.2	-3.3
Retained earnings on 31 Dec	98.3	107.5
Net profit for the financial year	9.0	-2.1
Total retained earnings	107.3	105.5
Total	107.6	105.8
Parent company's distributable funds	107.3	105.5

PARENT COMPANY BALANCE SHEET		
EUR million	2021	2020
ASSETS		
Fixed assets and other long-term investments		
Non-current assets	0.0	0.0
Tangible assets	11	11
Investments	95.9	95.9
	96.9	97.0
Current assets		
Long-term receivables	6.6	7.0
Short-term receivables	10.2	3.6
Cash and cash equivalents	26.5	10.7
	43.4	21.3
SHAREHOLDERS' EQUITY AND LIABILITIES	140.3	118.3
Shareholders' equity		
Share capital	0.1	0.1
Share premium fund	0.2	0.2
Retained earnings	98.3	107.5
Net profit for the year	9.0	-2.1
	107.6	105.8
Liabilities		
Non-current liabilities	2.4	2.9
Current liabilities	30.3	9.5
	32.7	12.3
	140.3	118.3

BOARD OF DIRECTORS, MANAGEMENT AND AUDITOR 2021

MANAGEMENT

Board of Directors of Kuusakoski Group Oy

Members:



Johan Kronberg

MSc (Econ), Chairman of the Board
Member of the Board of:

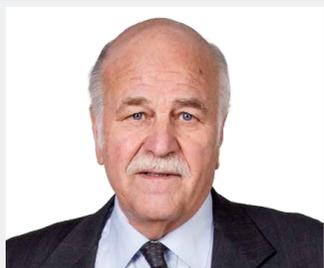
Auraprint Oy

Elomatic Oy

Jaakkoo-Taara Oy

Nordic Business Group Oy

Silo AI Oy



Veikko Kuusakoski

MSc (Law)



Mariella Kuusakoski-Toivola

Commercial College Graduate



Arno Pelkonen

MSc (Econ)

Chairman of the Board of:

Alteams Oy

Annalan Kartano Oy

Member of the Board of:

Valucast Oy



Lauri Peltonen

MD, PhD

Deputy members:

Tapio Kuusakoski

MSc (Econ)

Tiina Orasaari

BBA

President of Kuusakoski Group Oy

Veikko Kuusakoski, MSc (Law)

Board of Directors of Kuusakoski Oy

Veikko Kuusakoski, Chairman of the Board

Pekka Erkkilä

Mikko Kuusakoski

Harri Nikunen

Johan Viklund

President and CEO of Kuusakoski Oy

Mikko Kuusilehto, MSc (Eng)

Management Team of Recycling operations

Mikko Kuusilehto, President and CEO (Chairman)

Olov Boman, Chief Executive Officer (CEO), Sweden

Tuomas Haikka, Chief Sustainability Officer (CSO)

Teuvo Kuusakoski, Business Director, Non-Ferrous and Stainless steel

Timo Kuusakoski, Business Director, Metals

Tuomas Mantere, Director, Production

Lauri Siukonen, Chief Financial Officer (CFO)

Board of Directors of Alteams Oy

Arno Pelkonen, Chairman of the Board

Mika Hassinen

Risto Kuusakoski

Timo Kuusakoski

Petteri Walldén

President and CEO of Alteams Oy

Asko Nevala, MSc (Eng)

Management Team of Foundry Operations

Asko Nevala, President and CEO (Chairman)

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Anne-Mari Järvinen, Executive Vice President, Group Sourcing and Management Systems

Petteri Kiili, CFO

Alicja Kobiela, Managing Director, Alteams Poland Sp. z o.o.

Kimmo Pesonen, Executive Vice President, Global Accounts, NET 2 CBU & Group CTO

Timo Puska, Executive Vice President, e-Mobility & Industry CBU

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