



graanul invest
SUSTAINABILITY
REPORT

2019

Sustainable forestry	6
Key production indicators	18
Carbon footprint	26
Innovation	32
Social impact	40

The year 2019
was successful for
Graanul Invest.

Graanul Invest had a very successful year in 2019. The success of a company can be measured in money, tonnes, or percentages, but it is perhaps most reasonable to measure it in terms of how close we are to achieving the long-term goals that we set. If the financial report is a numerical description of how well we did financially in 12 months, then the sustainability report is an objective and honest assessment for us, reflecting our progress. It was a great year for Graanul Invest from that point of view as well.

For the first time, we tried to calculate the total carbon footprint of our company and got an outstanding result - the carbon footprint of Graanul Invest Group was negative in 2019. As a manufacturing company, we are naturally pleased about that, and although forestry plays an important role in this, there are other extremely important factors as well - the efficiency of our operations, the use of renewable fuels and energy, the digitisation and automation of processes, and thorough consideration and analysis.

We have been working towards this for years and are now finally able to add up the numbers based on a recognised methodology. We sincerely thank everyone who contributed to this for their hard work. We have been monitoring all the critical indicators for years, from the use of water to accidents at work. A long-term time series of data and the experience of different production units have given us the strong foundation we stand on now - it is clear to us where we need to go from here.


The other component in achieving carbon neutrality is forestry. Sustainable forest management with a

long-term perspective that is managed by skilled specialists will leave future generations strong and healthy forests and the opportunity to use high-quality timber to improve their standards of living. The paramount goal of our forest management is to increase the share of high-quality timber in forests. As the cycle of forestry is decades-long, it is the kind of sector where you need to look far ahead to the future.

Our ability to deal with climate change, diseases, and introduced species in our forests are all major issues, the solutions of which are critical for our children and grandchildren. Environmental protection and natural biodiversity are essential and natural parts of forestry, and we are pleased to note that today, our portfolio also includes hundreds of key habitats and other natural communities that we are voluntarily protecting in our forests.

In the future, our most significant issue in timber use will be how to create the greatest possible value in a sustainable fashion. We have worked hard on this issue for years, and in 2019 as part of the SWEEDWOODS project, the construction of our new flagship plant began in Imavere, Estonia. The results of the first stage should be verified soon, and hopefully, we will be able to move on to the next stages where we can produce innovative products with high added value. Our goals are the efficient use of resources (energy, timber, and water) and internationally attractive products.

In the end, however, a company is created by the people – our employees, their families, the communities in which we work, and the countries in which we operate. We are pleased to have been able to support many local initiatives in 2019 with a particular focus on young people, which are our future. We have supported dozens of local ventures in all locations where we operate and have received a lot of positive feedback and assistance in return.

 Raul Kirjanen,
CEO of Graanul Invest

2019 in numbers:

- Graanul Invest produced **2,492,033 tons** of wood pellets. Wood pellets are solid biofuel and one of the most effective renewable energy sources.
- Graanul Invest Group produced **341,3 GWh** carbon-neutral green energy and **2,214 GWh** renewable heat energy.
- Graanul Invest forestry portfolio is **53,687 ha** in Estonia and **1,221 ha** in Latvia. Forests were reforested with **1,487,000 trees**.

Graanul Invest Group is a carbon negative group -

this means that the balance of our emissions is not only zero, but it is strongly negative.

A carbon negative group



Graanul Invest Group planted a record number of forest plants -

more than 1.48 million trees.



Graanul Invest started a new biomaterials business line -

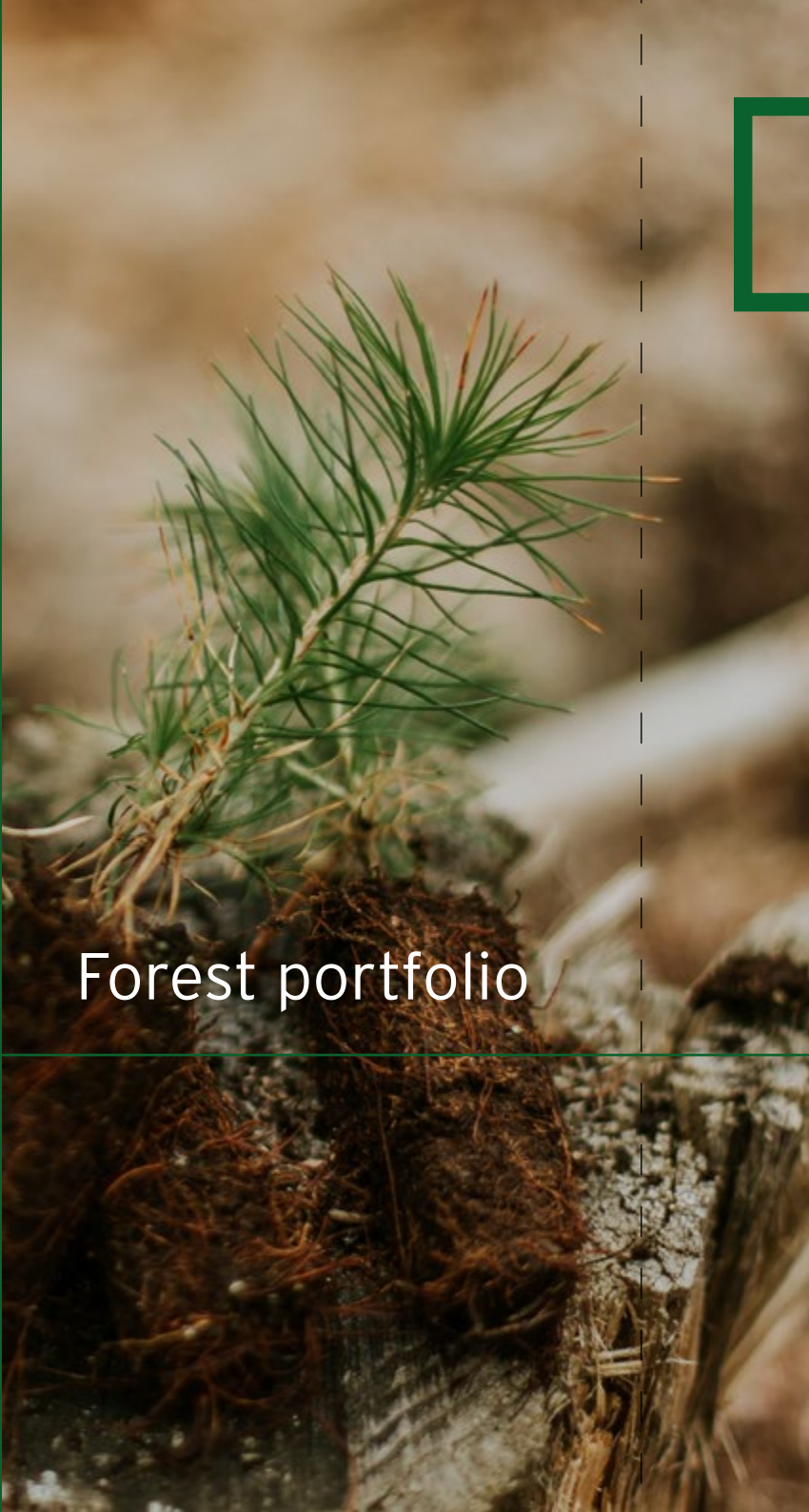
started with wood valorisation flagship construction works.



Sustainable forestry

The Baltic states are countries where forests play several roles for both society and the people. By sustainable forest management, we guarantee durable forests and determine what kind of forests we can pass on to future generations. In our region, most of the forests are man-made or shaped by human intervention, and therefore, our forests are our responsibility. It is irresponsible to leave our forests without care. Sustainable forestry means active participation and continually improving management methods and monitoring. Forest management practices are based on long-term expertise and scientific research.

For Graanul Invest, sustainable forestry means that there is a place for rare species and habitats, carbon sinks, mushroom pickers, logs, and culture. It is crucial to keep in mind that we have received our forests from previous generations, and we must pass on as healthy or even more viable forests to our progeny.



Forest portfolio

The forest property portfolio in Estonia amounted to

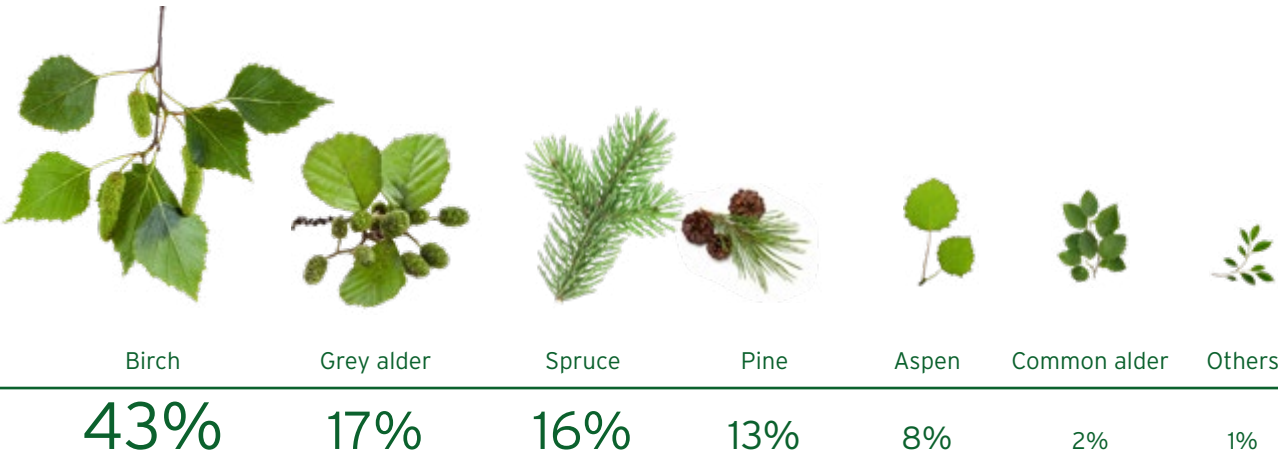
53,687 ha

The forest property portfolio in Latvia:

1,221 ha

At the end of 2019, the total size of our forest property portfolio in Estonia amounted to 53,687 ha and 1,221 ha in Latvia. The growth of the forest portfolio has not been as rapid as we hoped (especially in Latvia), but our aim is not merely to add to the hectare count; every forest added to our care must comply with our long-term principles and the requirements for sustainability.

Distribution of the area of forest land by the main tree species:



The primary forests in the portfolio of the Group are mixed forests, with the birch dominating. The large share of alder groves in our portfolio points to a high number of forested pastures. The surface area of coniferous forests remains at 29% and, to increase this percentage, 1.7 times more coniferous forests are planted every year compared to the amount harvested. We are aiming to achieve mixed forests in which coniferous trees are predominant but which still have the percentage of deciduous trees characteristic to the region.

Forest management

- 1
- We are increasing the growing volume of our forests to improve the carbon sequestration capability and thereby the availability of raw material for the wooden products with a long life cycle.
- 2
- A purposeful and varied forest management style in different regions that takes into account the current state and specifics of the neighbouring forest stands, and implementing suitable and timely practices for preserving or stimulating the correct functioning of biological processes.
- Graanul Invest Group forestry companies Roger Puit, Karo Mets and Valge Puu have set the goal of managing their forests responsibly and prudently. Novel solutions and the best practices are used to accomplish this.

SMART FOREST MANAGEMENT

The forest companies of the Group are increasingly moving towards smart forest management. Harvesters complete 98% of the cutting volume for reproduction cutting and thinning, so only 2% of the work is done manually. Smart forest management means using useful digital solutions to do the job. For example, the software of the harvesters uses matrices for cross-cutting logs, which gives the operator the optimal solution to ensure the highest possible value from each assortment cut. The machines also use forestry software with maps which show the borders of the cutting area, their position, the planned removal routes and log yards, restricted areas, and other information required for the harvesting works. At the end of a shift, the entire cutting and removal information is forwarded to the logistics software, which is used to coordinate the logistics of roundwood and wood chips and is used by truck drivers to create e-conveyance documents.

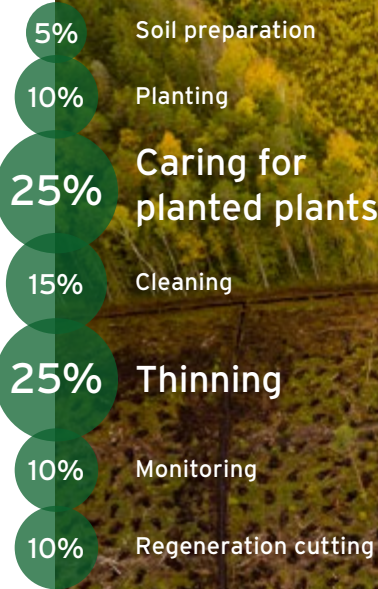
Such solutions increase the resource efficiency of timber (increasing the proportion of the timber material used in industries that produce long-life products) and minimise unnecessary steps and transport. These solutions, in turn, mean lower fuel consumption and less damage to the soil.

Digital and up-to-date information can be used to get an overview at any time and any location, which allows for quick management decisions. Digital data exchange enables saving valuable working time, reducing the number of errors, and obtaining a good overview of the movement of the wood from the cutting area to its destination.

FORESTS REPRODUCTION AND MANAGEMENT

Forest management does not only include cutting of mature forests. The majority of the work remains unnoticed to the untrained eye and is continuously done over a long period before the harvest cut takes place. The companies of the Group pay a lot of attention to reproduction and maintenance operations to achieve results complying with their goals. For this purpose, planted and sown cultures were maintained on 1,125 hectares, non-commercial selective cutting was performed on 900 hectares, and thinning on 950 hectares in 2019. Sanitary cutting to eliminate storm, fungal, and insect damage was performed on 250 hectares. The damage was caused by the mild winters of the last few years, which have created favourable conditions for the spread of various forest pests.

The distribution of time spent on forestry works:



Roundwood assortments

SOURCING OF WOOD

The Graanul Invest Group's annual cut was 656,000 cubic metres in 2019.

Of that, 58% was cut from our forests and 42% as a service in other private forests. Reproduction cutting accounted for 84% of the wood collected and 16% from maintenance cutting. Our distribution of the roundwood cut into assortments was: 10% pulpwood, 30% firewood, 35% logs, 25% energy wood.

In 2019, a total of 583,000 m³ of wood chips were produced, 55% from our holdings and 45% from other private sources. These chips were used to generate all of the electric energy and heat of Estonia's combined heat and power plants.



The low percentage of logs indicates limited management by previous owners of the forests. Since regular maintenance was not performed, many trees are not compliant with the requirements of the sawmill and plywood industries (see the quality requirements on page 13).

Maintenance is essential from the perspective of forest management. It includes cutting weaker, twisted, and damaged trees, which improves the growing conditions of viable one, increases their growth rate, improves the characteristics of the trunks, and shapes the composition of the species.

The low percentage of pulpwood also demonstrates that we mainly operated in forests of poor quality in 2019, where passive management is also expressed in the wood products. Much of the pulpwood became fuel wood because the wood cut for pulp factories was collected in excessive amounts, expired, and was brought from long-term storage to the energy industry.

The goal of the Graanul Invest Group is to increase the percentage of logs to 50 per cent by 2050. This is one of the fundamental principles of our forest management operations, for which we are prepared to invest a lot of time and resources.

This goal means increasing the volume of growing forest, which, in turn, will result in a proportionally higher amount of carbon sequestration and a wider availability of future wood production for creating goods with longer life cycles, such as in construction or the furniture industry.

It is our duty as an above-average-sized forest management company, if not our obligation to the climate and the environment.

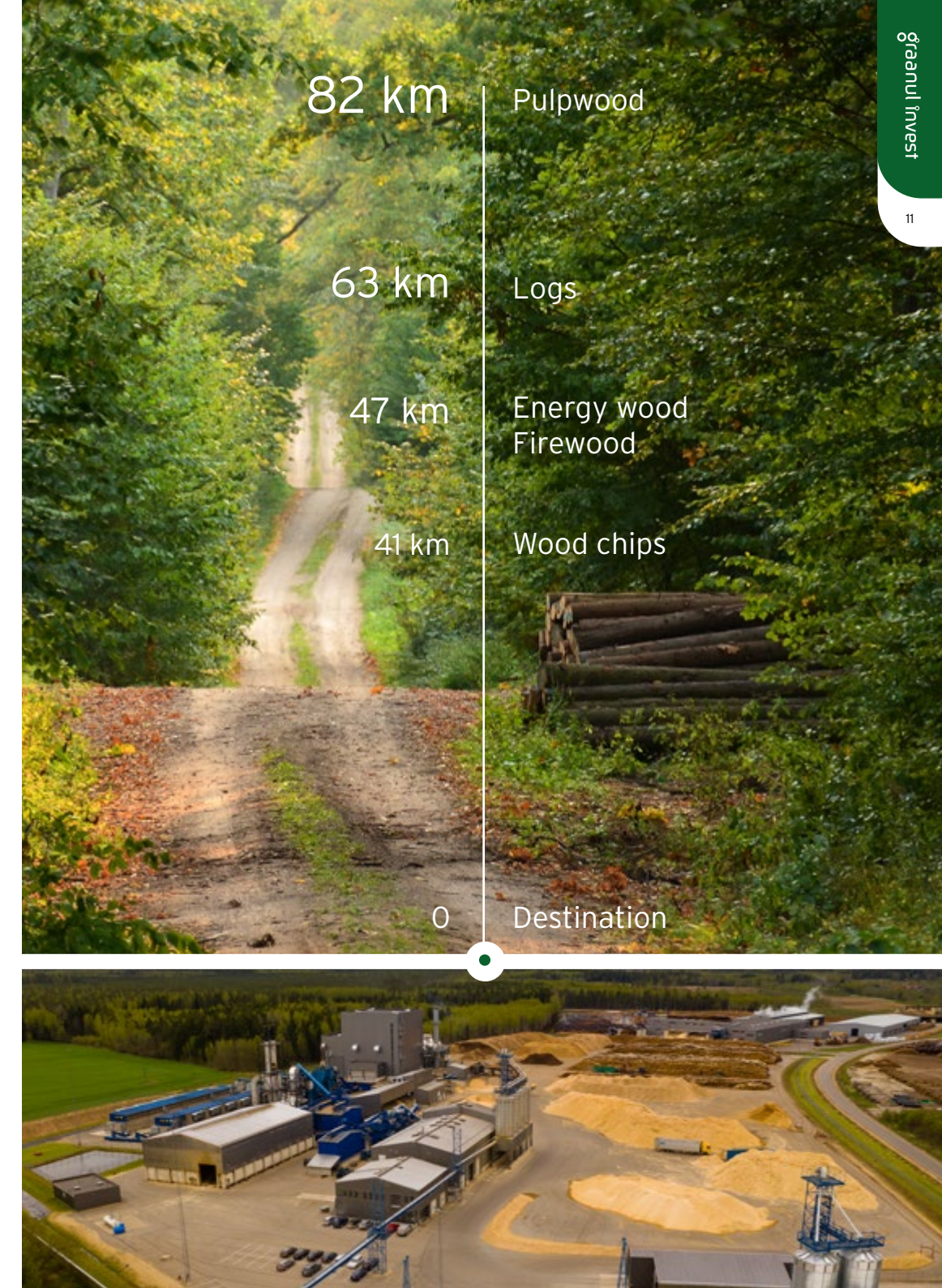
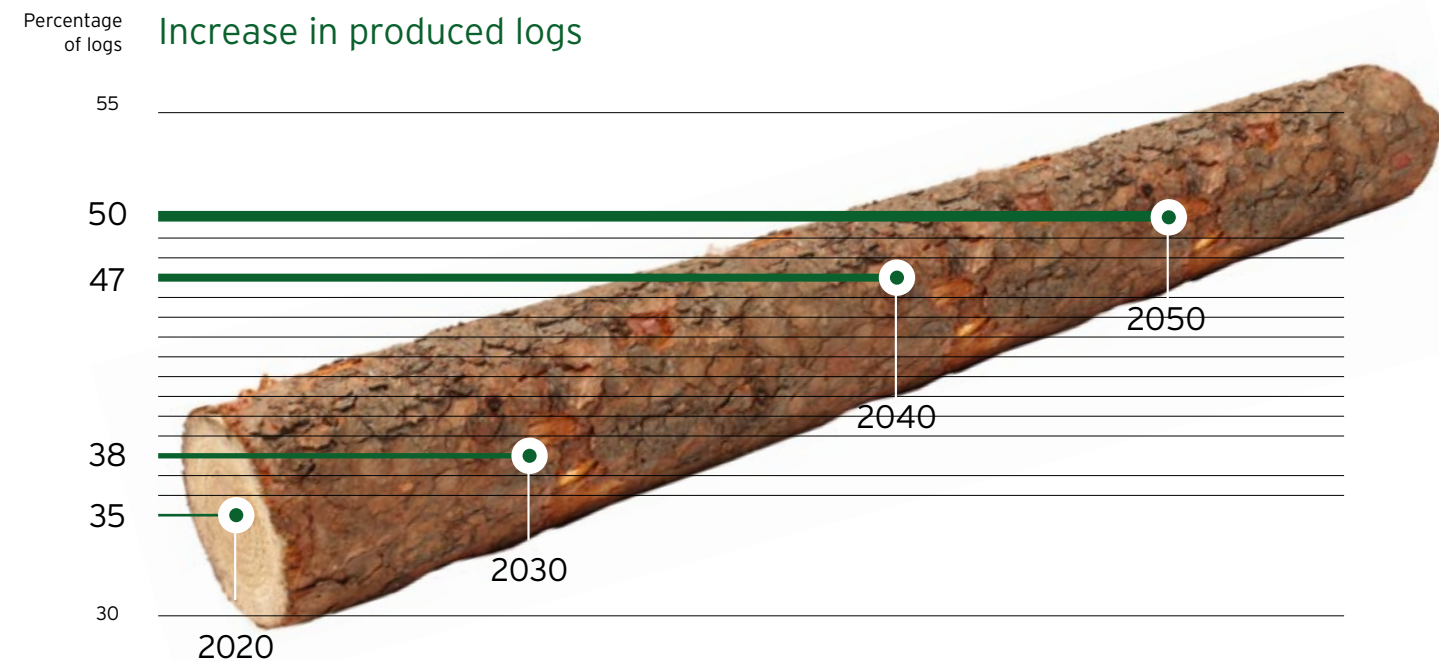
LENGTH OF JOURNEY

In forest management, the length of the journey the wood travels from the forest to its destination is significant and helps to assess the environmental footprint.

For pulpwood, the average distance is the longest at 82 km. The length of the trip for pulpwood is calculated from the forest to the port. The distance of the sea voyage and the journey from the port to the cellulose factory need to be added to the total, as well. These facts discredit the concept of sustainability in the pulpwood collected in Estonia if it is shipped abroad and stresses the need for the local valorisation of the assortment.

Energy wood, firewood, and wood chips are mainly transported to the plants of Graanul Invest, which are distributed all over Estonia; thus, the journey from the forest to the plant is also the shortest.

The lengths of the journeys of different assortments from the forest to its destination



DIFFERENT ASSORTMENTS REQUIREMENTS

It may remain unclear why we do not sell all of the wood to the sawmill industry and why some logs are not good enough for making paper. There are very specific quality requirements agreed on between the forestry sector and the wood consuming sectors. By following these requirements, it is already evident at the planning stage of forest cuts how the wood products of a specific stand will be distributed between different industries. Here, we set out the quality requirements of various sectors that determine the assortments, the price, and the entire chain of roundwood usage. Simply put, we outline the questions that a forest manager must answer before dividing wood into different assortments.

See the requirements table

As can be seen from the graphs, the journey of low-quality roundwood to the energy industry is not at all accidental or unclear. This material is left out of the quality classes of certain sectors unambiguously and based on specific parameters. There is no dispute in making these classification decisions.



REQUIREMENTS FOR SOFT WOOD

	LOGS	PULPWOOD	FIREWOOD
Diameter (cm)	11-60	6-60	3-75
Forest rot	●	< 30% of the diameter	< 50% of the diameter
Storage rot	●	●	< 40% of the diameter
A steep warp, swelling	●	● if it complicates debarking	●
Mixed species in one shipment	●	●	●
Fresh wood	●	●	○
Scars	●	●	●
Tears	●	● if it complicates debarking	●

Required ●

Permitted ●

Not permitted ●

Not required ○



REQUIREMENTS FOR HARD WOOD

	SAWMILL	PLYWOOD	PULPWOOD	FIREWOOD
Diameter, cm	11-60	16-60	6-60	3-75
Forest rot	●	●	< 30% of the diameter	< 50% of the diameter
Storage rot	●	●	●	< 40% of the surface area of the end
A steep warp, swelling	●	●	●	●
Mixed species in one shipment	●	●	●	●
Fresh wood	●	●	●	○
Scars	●	●	●	●
Tears	●	●	● if it complicates debarking	●



Reforestation

REFORESTATION

Reforestation is an essential part of forest management that starts the new forest life cycle. In 2019, new generations of forests were created on 940 hectares, of which 930 hectares was accomplished by planting and 10 hectares by sowing. A record number of forest plants were planted – 1,487,000.

In autumn, the planting volume increased by 20 per cent. The advantage of planting in autumn is the more humid weather, which ensures that the plants take root better and allows the planting work to be spread over a more extended period.

The plants were treated with natural substances in the areas with a higher risk of damage caused by wild animals or insects. The bottom section of the trunk was covered with wax to prevent insects, particularly the large pine weevil, from damaging the bark of a young plant. Plants were also treated with a product containing mutton fat to prevent deer and elk from eating them.

The planting area included harvest sites as well as areas without a specific purpose, such as low-value grasslands. Adding high-quality woody plants to grasslands makes it possible for them to participate more actively in carbon sequestration, create new habitats, and generate wood required by society.

Almost half of the harvest sites with a high potential of good growth for deciduous trees were left untouched for natural reproduction with the help of suitable seed trees. Natural forest reproduction helps to alleviate the risks and damage arising from storm, fungal, and insect damage in the changing climate conditions and to ensure natural diversity.

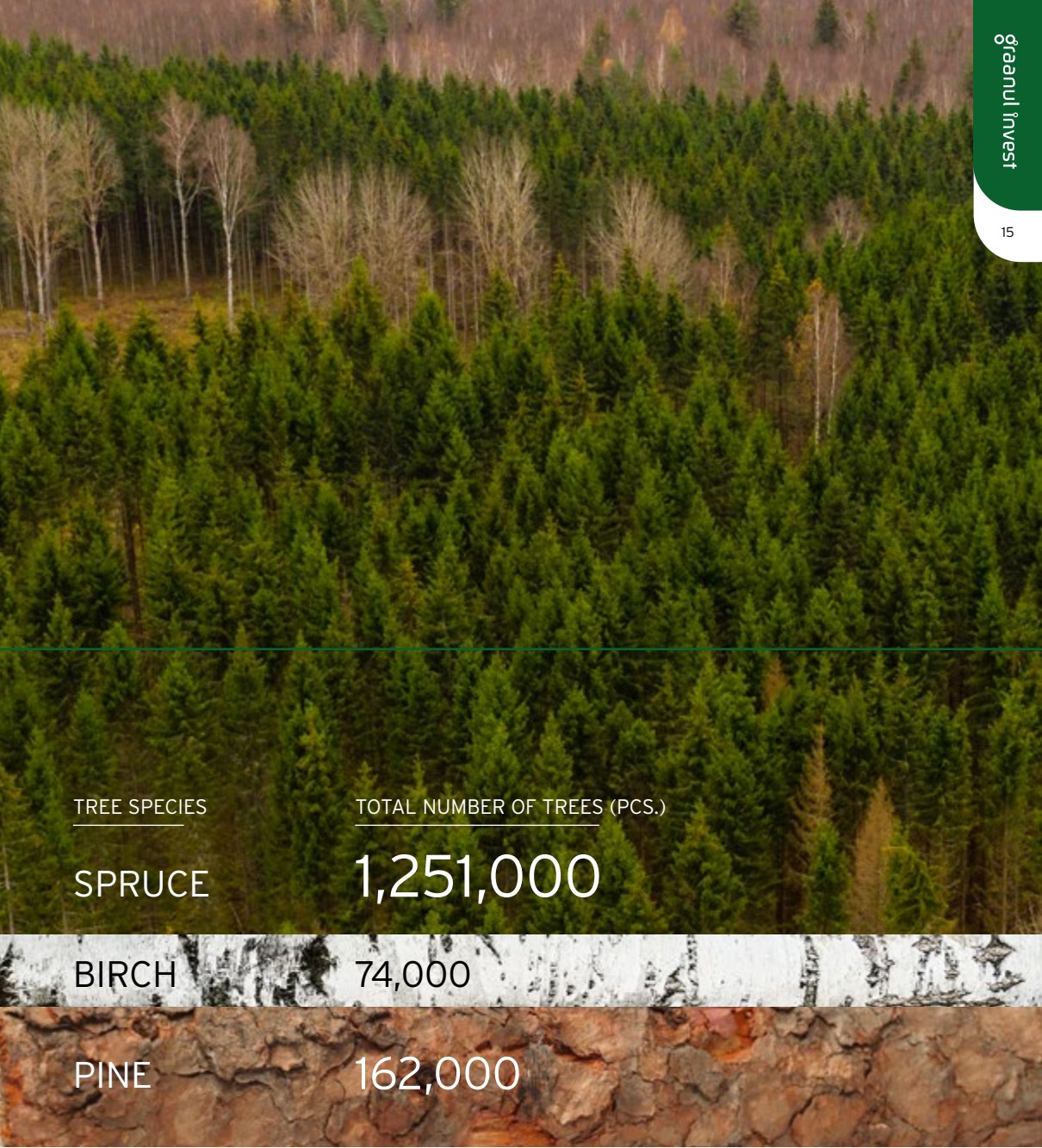
The natural renewal of forests and, thus, the emergence of healthier ecosystems must play a vital role in the strategy for climate change adaption. A forest that has naturally regenerated has gone through the process of natural selection and comprises healthy ecosystems capable of fending off invasive species, pests, and diseases, which have become a serious problem in our region.

Contrary to the common misconception that reforestation is only possible through planting, Graanul Invest will continue with large-scale monitored natural reforestation. This way, future generations will have forests that adapt to climate change and where the integrity and productivity of ecosystems have been preserved.

Machine planting was tested for the first time – a small excavator was used with planting heads. First, the machine prepared the soil, by creating the turf required for planting, and then it placed the potted plant in it. This method can be used efficiently in waterlogged areas and throughout almost the entire growing period.

Distribution of the planting by tree species

The natural renewal of forests and, thus, the emergence of healthier ecosystems must play an essential part in the strategy for combating climate change.



1,487,000 TOTAL NUMBER OF TREES



The protection of Baltic forests is among the strictest and most effective in Europe.

PROTECTING FORESTS AND NATURE

Restricted or strictly protected forests make up almost a quarter of all forests in the Baltic states, which has helped to maintain the rich biodiversity of our region and guarantee their preservation.

As a forest owner and active forest manager, Graanul Invest considers purposeful protection of nature of paramount importance, and we fulfil all the obligations applying to us. As an active stakeholder, we participate in research and working groups so that future protection measures and their possible expansion would be meaningful and take into account the combined effects of the natural environment and the bioeconomy. In addition to local and international requirements and restrictions, we also follow international best practices in managing our forest portfolio, such as voluntary requirements from sustainable forestry certificates, which add protected sites and further increase the efficiency of conservation activities.

While some private forest owners try to avoid owning restricted forests, Graanul Invest’s forest companies are convinced that protection of nature is an integral part of forest management. Therefore, we have not prevented various protected areas and habitats from falling into our care.

The area of forests in our portfolio with various management restrictions or additional obligations are more than 6,000 ha, which is roughly 11% of the total forest land we own.

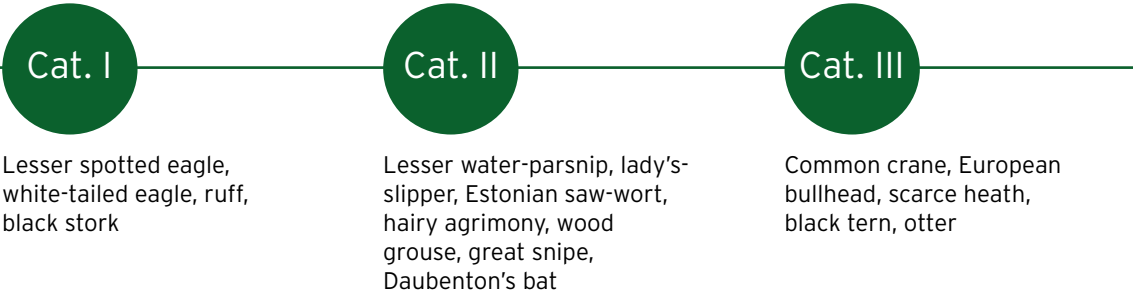
There are many overlaps between restricted areas; however, in our forests the main categories are beach and shore, protected area and permanent habitat restrictions. Limited management areas on beaches or shores are the largest share, accounting for 57% of our forests with special requirements. It is essential to protect such areas to preserve their unique ecosystems and minimise soil damage due to the high risk of erosion. Coastal activities also have a significant impact on the ecosystem within water bodies, which means that our responsibility in these areas is high.

The forest portfolio of Graanul Invest also overlaps with national parks and protected areas. On such forest properties, our forest companies act as park rangers by following the rules and requirements of the nature reserve; this means protection, monitoring, and, if necessary, maintenance. Maintenance can also involve felling trees in accordance with the restrictions of the protected area to maintain or improve the conservation value in areas under our control.

Restrictions related to protected and conservation areas make up 31% of the total share of our restricted forests.

Permanent habitats and objects of nature and heritage protection have a pervasive network but make for modest restrictions in the context of the total area. Their share is 7%, but finding and defining them in nature requires a lot of experience and new smart solutions. High-precision GPS devices and forest managers play an equal role here in identifying, defining, and protecting the conservation value.

It is estimated that the species, from most unique to endemic, in our managed forests are:



The remaining restrictions (around 5%) relate to voluntary or international best practices that allow forest owners to raise the sustainability of their forest management to the highest international levels. Such requirements are agreed and implemented through sustainable forest management certificates.

Graanul Invest's forest portfolio is fully certified. Still, due to the strict forest laws of the Baltics and comprehensive nature protection regulations, the restrictions need to be broadened only to a minimal extent to comply with international best practices. In other regions, where the level of forest management is not so high and the history not so long, such certification requirements may constitute most of the restrictions. In this category, the most important places woodland key habitats, areas where there are signs of conservation value but no legal obligation to protect.

In such cases, forest managers rely on additional controls and have unambiguously agreed to protect such areas if the characteristics are verifiable. Natura 2000 habitats are also included in this category, but most of them are already subject to the restrictions mentioned above.

Key production indicators

Wood pellets are a renewable natural resource and sustainable source of energy



In pellet production, Graanul Invest achieved a historic record in 2019. **In total, 2,492,033 tonnes of wood pellets were produced.** Of those pellets, only 2.5% were composed of premium pellets used by households and the rest by industrial purposes.

We increased our production capacity by opening a new plant in Texas in the second half of the year, but the plant only managed to produce a bit more than 194,835 tonnes last year. This result means that our European plants produced more than 530,000 tonnes of wood pellets more than in 2018, which is a substantial increase which primarily arises from the raw material market and climate conditions. The overall number is exactly where we expected our maximum optimum production volume in Europe to be.

With our new, 12th plant, the wood pellet production capacity of Graanul Invest reached 2.7 million tonnes per year.

*The performance indicators specified in this report are based on the production volumes and consumptions of the European plants. The 2020 report will also include Woodville Pellets in all areas which will then have operated its first full year as a Graanul Invest plant.

The origin of the material

Wood pellets are an environmentally friendly biofuel that is produced from forestry and timber industry leftovers. The raw material distribution of Graanul Invest has not changed much in the year. The sourcing chains for the timber and forest industry waste have been shaped throughout the years and is not changing much.

In the Group's European plants, 45.6% of the raw material was formed by timber industry waste (sawdust, chips, and wood shavings) and 54.4% by roundwood of the firewood quality class.

Wood pellets raw material

Firewood from Belarus, which reaches us in chipped form by train, can be highlighted as a new feedstock stream. This raw material is new to our company; however, since Belarus has an active timber industry and forestry but a lacking wood-based bioenergy sector this material has the highest valorisation potential in the Baltic states. Furthermore, it meets all of our requirements for the sustainability and origin of the material and has turned out to be a fundamental stabiliser in a fluctuating raw material market. This material forms 3.85% of our raw material basket.

2,492,033 tonnes

Total of wood pellets



Timber industry waste

Firewood quality class



Our raw material mainly originates from Latvia (43.4%), Estonia (41.8%), Belarus (10.1%, of which 3.85% is firewood and the rest timber industry waste), Lithuania (4.4%), and Poland (0.3%). Through the timber industry, our sourcing chain also reaches Russia, Finland, Sweden, and Norway at the stump level, but we do not ship raw material directly from these countries.

RAW MATERIAL ORIGIN



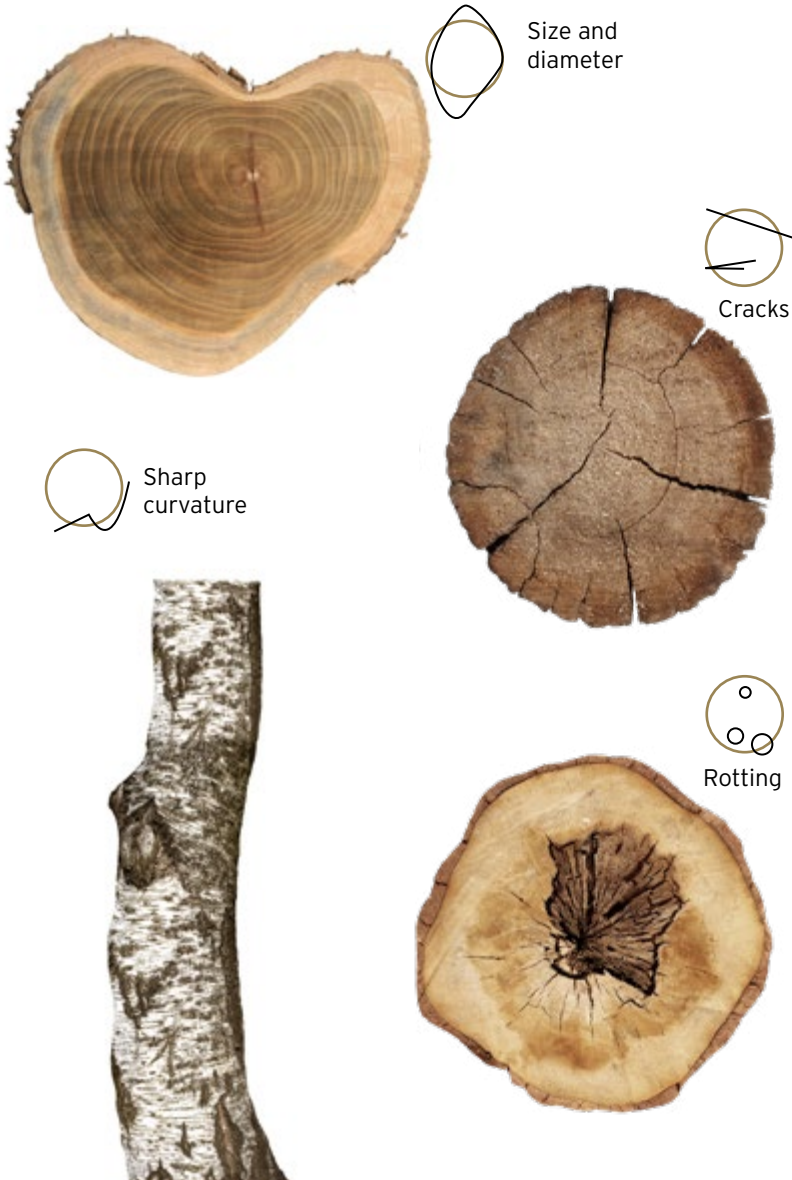
Most of the raw material of the Group is transported by trucks. The weighted average one-way sourcing distance of all raw material types is 55.4 km (compared to 53.4 km last year). We aim to remain within a sourcing radius of 70 km, so we are still well ahead of this target.

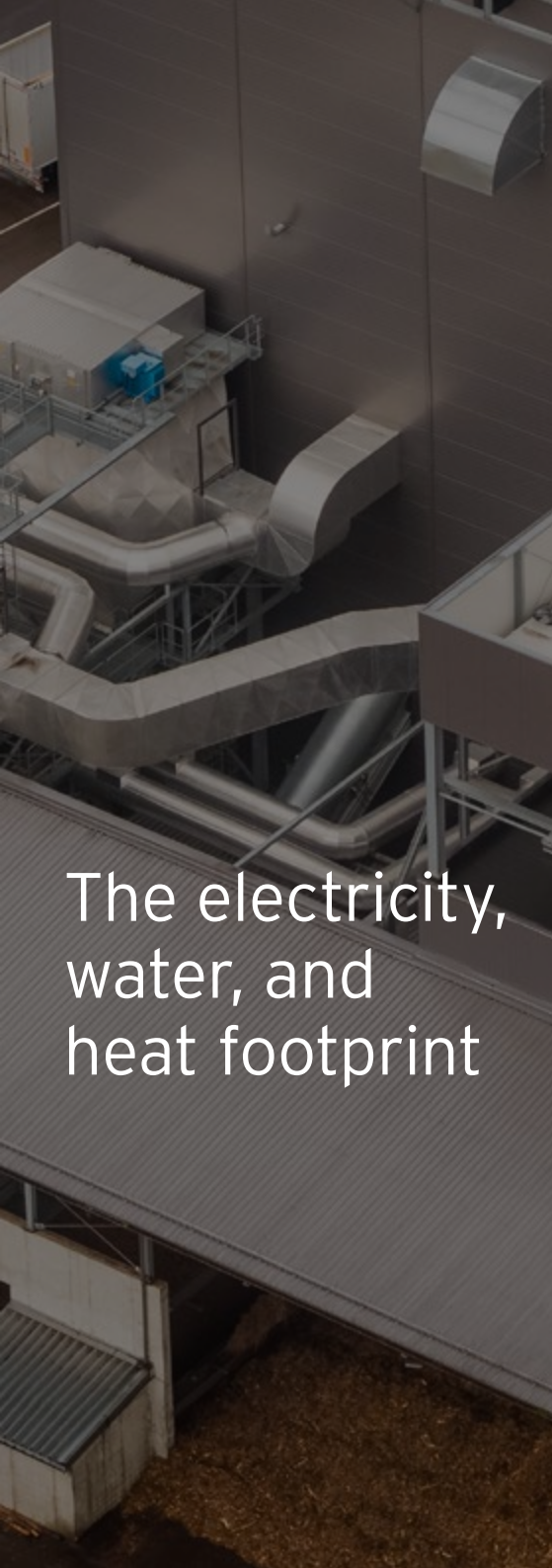
The sourcing radius of the material delivered by train is 560 km, which shows the average distance of the raw material from Belarus from our plants. Thanks to the large volume of train wagons and the lower fuel consumption per one unit of weight, we can deliver material by train from considerably further locations compared to trucks without increasing the greenhouse gas level of our sourcing chain.



Pictures and features of the material

Why are trees with a large diameter also sometimes used in pellet production? These logs are deemed defective in the timber industry because their lengths, twists, damages, metal content, or other defects make them non-compliant with the requirements of sawmills, plywood factories, and pulp industries.





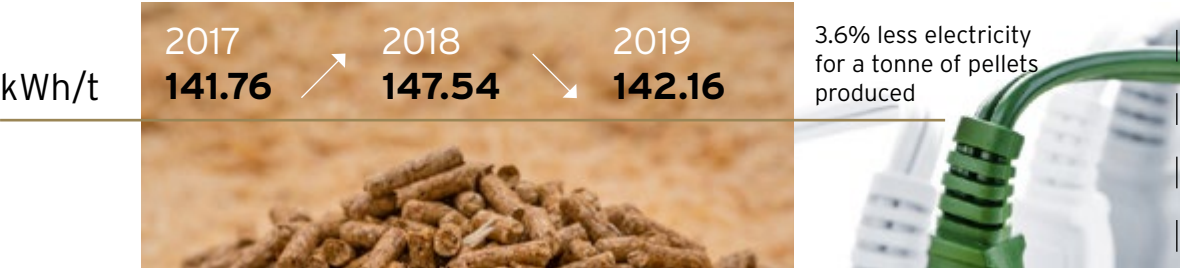
The electricity, water, and heat footprint

Green energy

Graanul Invest Group heat and power plants provide sustainable electricity and heat for our pellet factories and support the local electricity network with green energy. The Group has six heat-and-power plants in the Baltics.

An outstanding result in energy efficiency was achieved in 2019 by reaching the desired production volumes. The company met its electric power cost-efficiency goal and was able to use 3.6% less electricity for each tonne of pellets produced compared to the year before. It is very encouraging to see that our energy performance is improving at maximum operating capacities – this means that a larger production capacity has not been accompanied by outages or failures.

ELECTRICITY USAGE PER KWH



The energy-related figures of the Woodville plant in the United States are not included in the reports for 2019, as this plant has not yet been included in our Group for a full year. At the time of completing the purchase, the power consumption there was 240 kWh/t, which on the one hand, provides a perspective on the very efficient operation of our European plants and, on the other hand, shows that we still have a lot of work to do at the Woodville plant in this area.

Graanul Invest is also one of the largest producers of renewable energy in the region, having generated more than 10% of the renewable energy in Estonia in 2019 (219 GWh / 1946 GWh, 11.3%, source: Elering). In the Baltic states, Graanul Invest generated 331.3 GWh of carbon-neutral green energy. It is 0.8% less compared to last year but still over 96% of our optimum capacity, which shows the continued high efficiency of our power generation. The significant fluctuations in the characteristics of biomass and the calorific value have not had an impact on the efficiency and reliability of our energy production.

Five of our European pellet plants have combined heat-and-power stations, which cover the entire power and heat demand of the plants and transmit renewable electric energy to the grid. In 2019, these plants (in Imavere, Osula, Helme, Inc̃ukalns, and Launkalne) generated 28.5% more energy, on average, than they consumed. In Estonia, where the emission level of the electricity from the general grid is the highest, our green energy generation capacity is also the largest.

During the financial year, the amount of electric energy that we generated was almost 24% higher than the consumption of all our Estonian plants combined. Despite of our record production volumes, all our European plants depended on grid electricity only to the extent of 6%.

Energy independence is essential for any processing industry, but being independent to such an extent due to using renewable energy sources is rare in Europe. This independence provides Graanul Invest significant advantages in the context of climate policy measures and grants in the next decade and is a substantial factor in the removal of our carbon footprint.



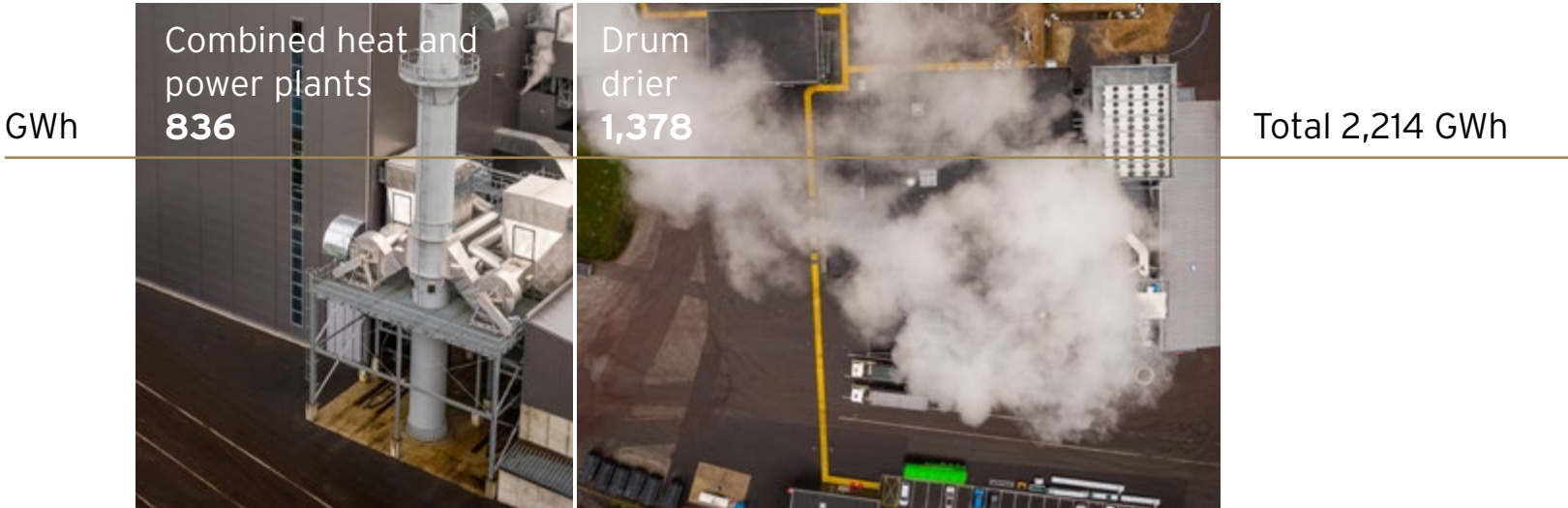
We can proudly state that 100% of the heat energy that we consumed comes from renewable sources, such as carbon neutral biomass.

Heat energy

Reducing the emissions of electric energy generation and increasing the efficiency of its use has gained a lot of attention in Europe and elsewhere in the world. There are already several grant schemes, policies, and success stories surrounding it, and its nature and necessity are widely known. The most energy-intensive part of energy consumption – heat energy – has, however, been approached very passively. Heating and cooling require roughly half of the total final energy consumption in Europe. Only a fifth of this is generated from renewable sources. In the industrial sector alone, more than 70% of the final energy use is spent on heat energy (ec.europa.eu, heating and cooling, facts and figures) and the heat consumption of the Graanul Invest Group is also almost seven times higher than its electricity consumption.

Of that, 38% was generated as a by-product of extremely efficient power generation, the rest generated in biomass furnaces to supply the drum driers. Our efforts in developing our technology and supply chains have created a situation in which our company is compliant with the European climate targets for 2050 and is even well ahead of these targets. We are particularly hoping to set an example for the companies that are dependent on heat energy and cannot count on centralised solutions and should already be tackling the problem today. Generation of renewable heat energy is more common in the Scandinavian and Baltic region, but the Western European industries have fallen behind in this respect.

HEAT ENERGY PRODUCTION



The electricity, water, and heat footprint

The specific water consumption has dropped by 16.5%

Water consumption

Water consumption per tonne

	2017	→	2018	↘	2019
m ³ /t	0.12		0.12		0.10

Graanul Invest achieved the water consumption target it had chased for several years, reducing the specific production consumption to 0.1 m³. Compared to last year, **the specific water consumption has dropped by 16.5%**, which has been achieved thanks to the significantly higher wood pellet production volume and stability.

The specific water consumption has dropped at almost all plants of the Group. In the best cases, the specific consumption has fallen by more than 30%.

The only exceptions are the plants of Jēkabpils and Krāslava, where the specific water consumption increased. In the case of Krāslava, the increased use was caused by the need to irrigate the production material in the warm months; Jēkabpils, however, started to add water to the pellet pressing process in the second half of the year to improve the quality of the product while also reducing the wear and tear of the machinery and the power consumption.

The specific water consumption dropped the most at the plants of Inčukalns and Launkalne - by 32.6% and 30.1%, respectively. The achievement of the Inčukalns plant was mainly caused by an increase in the production volume. The consumption of the Launkalne plant largely dropped thanks to the construction of the new aspiration system which reduced the need for cleaning the roofs of the buildings and grounds with water.

5% less than the year before

Diesel consumption

Diesel consumption per tonne

	2017	↘	2018	↘	2019
l/t	0.62		0.60		0.57

We have been able to achieve our specific diesel consumption target in three consecutive years. In 2019, it was 0.57 litres per one tonne of production, **which is 5% less than the year before.**

Diesel is used by our front loaders for the transportation of raw material on the grounds of the plant. This function is essential in preserving our flexibility in handling different types of wood waste generated by the local industry. In the pre-treatment of the material, roundwood is placed at the beginning of the line, wood chips to the middle, and sawdust at the end. As we are using modern machines and our work routines are well-developed, improvement of the specific consumption is mainly related to increasing the production volume.

As transportation of raw material is the only operation in our production which is based on fossil fuels, it is imperative to continually reduce the consumption here until we have sufficiently reliable and more sustainable technologies available. We are keeping a close eye on the development of natural gas-, biofuel-, or electricity-based front loaders.

The Graanul Invest Group is a carbon-negative group, which means that the balance of our emissions is not only zero but is strongly negative, functioning as a sink for carbon dioxide equivalents.

3

Carbon footprint

A carbon negative group



graanul invest

Carbon footprint

The European climate neutrality targets for 2050 are vital, but also very ambitious. Seeing how little of the energy for end consumption comes from renewable sources today, it is not likely that all industries will independently become carbon neutral. A lot is invested in novel technologies which help to reduce emissions. Still, for neutralising the climate impact, sequestration (or binding) industries are also required to achieve a negative carbon footprint.

Achieving carbon negativity is a goal which many companies worldwide would like to reach in the future, but which Graanul Invest has already attained today. We have been a carbon removing company for a few years, but more extensive calculations were made for the first time in 2019 involving the entire Group. We certainly made a great leap towards a negative carbon footprint a few years ago, when our heat and power generation reached its current production volume and we became one of the largest private forest owners in Estonia. The carbon footprint of the Group has not been calculated

before because there have been no clear rules and principles for calculating and ensuring it.

The new renewable energy directive (RED 2) has finally established the calculating principles for the generators and consumers of bioenergy. Thanks to this, it is possible to calculate and compare the profiles of different companies based on the same grounds, i.e. based on the centralised rules of Europe. This way, it is also possible to check and audit the statements of companies regarding climate change. Graanul Invest has had the emissions of its entire bioenergy value chain verified by auditors to confirm our carbon profile and be responsible in our climate-related statements.

Simply put, the carbon profile of Graanul Invest Group is divided into four areas – pellet production, forest management, combined heat and power plants, and the forest portfolio. The first three are areas in which we emit carbon, and the forest portfolio is an area in which we bind it.

GRAANUL INVEST
GROUP'S CARBON
FOOTPRINT

Pellet production

331,636 tCO₂-eq

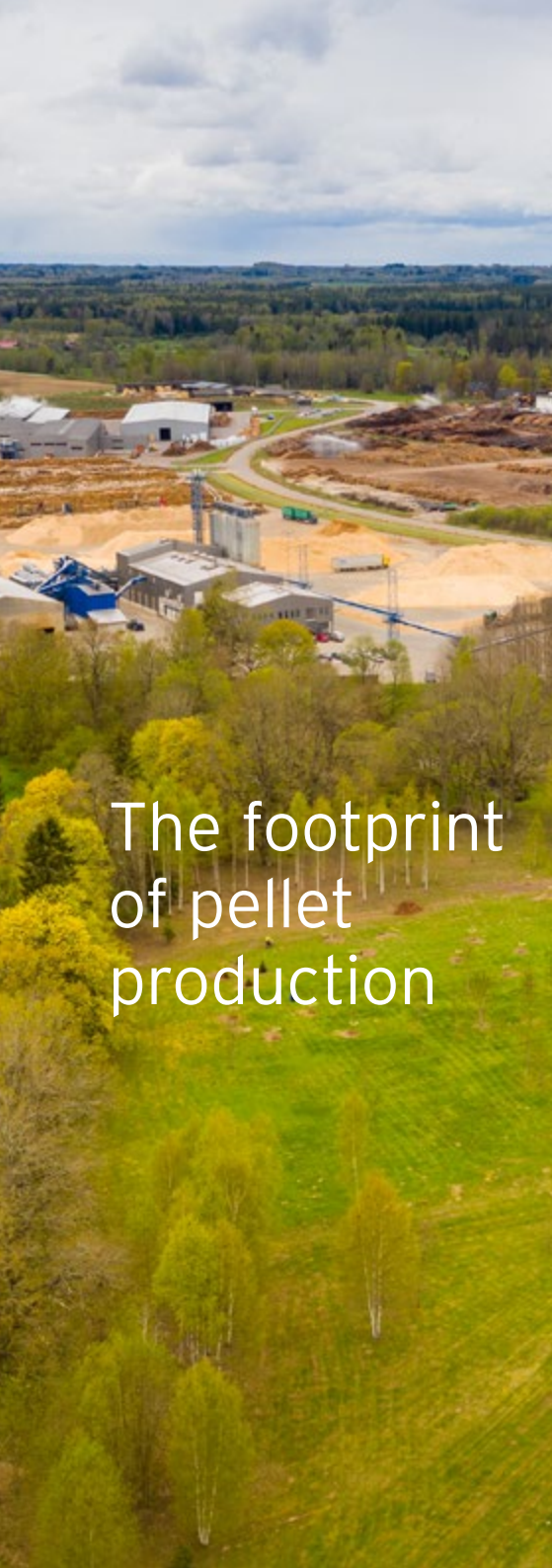
Forest management **1,915** tCO₂-eq

Combined heat and power plants **2,770** tCO₂-eq

The forest portfolio

-574,400 tCO₂-eq

Total carbon footprint: **-238,079**



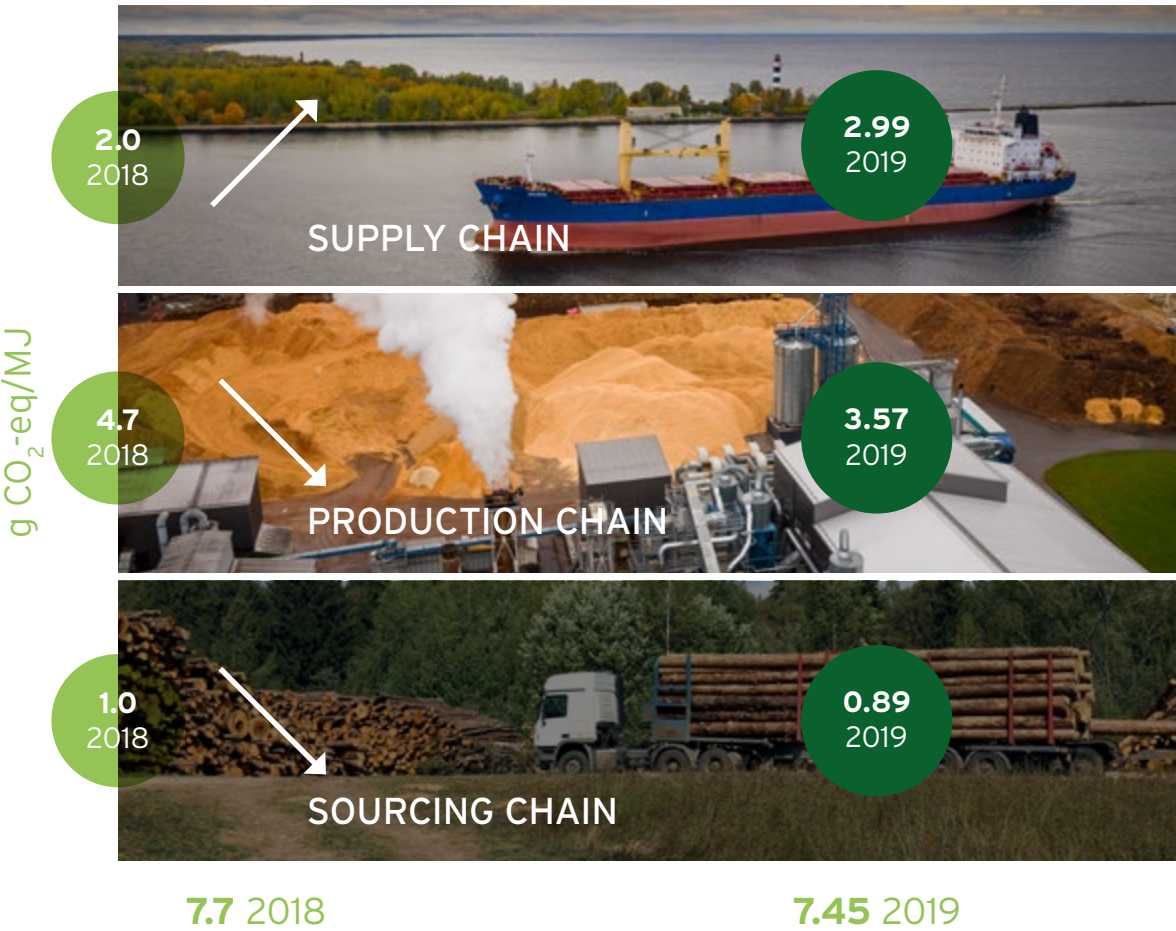
The footprint of pellet production

The footprint of pellet production

The profile of pellet production does not only consist of the plants. The calculation of the carbon profile is based on energy consumption in the firewood management, transportation of raw material, pellet production, and transportation of pellets (trucks to the loading port as well as marine shipping to the discharge port). Pellet production is our largest and most extensive activity and thus also the largest generator of carbon dioxide equivalents. We have been monitoring and reporting this figure for years and are happy to announce that we have yet again reduced the impact of our processing side and exceeded the targets set for 2019.

Our greenhouse gas figure for the pellet production value chain was 7.45 gCO₂-eq/MJ this year. This is our record in the last three years and a revolutionary low in the pellet industry, which was of course achieved as a result of all combined efforts. Still, the main advantage comes from the origin of the electric and heat energy (cogeneration with biomass), which is now counted fairly by the default values of the renewable energy directive.

The pellet production emission figure also includes last year's production of our plant in the United States.



The footprint of forest management

The next significant area in our carbon profile is forest management. Here, we count the forest work and material transport side from the fuel consumption of the harvester and forwarder to soil preparation and transportation of roundwood. We could argue here that the shipping of sawlogs to sawmills should be included under the carbon profile of the latter. But we have been conservative and added the entire fuel consumption in the balance of our company on similar reasons to those used in pellet production, where the transportation of the material from third parties to our pellet plants is included in our carbon calculations.



The footprint of combined heat and power plants

The last emitting area is the combined heat and power plants. As mentioned above, the electricity and heat energy generated by them is carbon neutral, and it is one of the reasons for the success of our carbon profile. However, their operations still also include fossil emissions which are related to the generation of wood chips and transportation, which includes the diesel consumption of chipping branches and forest residues and transporting them to combined heat and power plants. These emissions are not remarkable, taking into consideration the positive impact of the renewable energy generated at the combined plants, but they are still fossil emissions, which must be monitored and reduced.





The footprint of the forest portfolio

The essential emission binding area of the company is naturally our forest portfolio. Forests have a justified role in future climate strategy and are currently one of the few possibilities for emission sinking. Any company can reduce its emissions, but very few currently have the potential to remove emissions by taking the emissions already generated back from the atmosphere.

Graanul Invest has been mapping a tool for continually calculating and monitoring the carbon sequestration of its approximately 55,000-hectare forest portfolio for a long time. Searches, research, and the calculation principles acknowledged in Europe have led us to the carbon calculation model of the European Forest Institute, which takes into consideration the peculiarities of our forests and species. The model is backed by more than 20 years of development and research, which confirm its suitability for the forest and soil types of our region. The local and international researchers who we have approached with the task of our forest carbon modelling have also advised us to use the approach of the EFI.

The most significant principles in the modelling of the carbon dioxide equivalent balance of the forest portfolio of Graanul Invest:

- The balances of all dominating tree species are calculated separately, and its annual figures contribute based on their percentage in the entire portfolio.
- The calculations of the surface biomass are based on the current average growing stock per hectare. Thereby, the low sequestration capability of treeless fields and young forests are taken into account, and the impact of cut forests is also immediately reflected in the model.
- The average growth curve of a mixed stand is used based on the nature of our forests.
- The carbon balance also includes periodical thinning before reproduction cutting.
- The maximum growing stocks of most species are based on the averages of Estonia, not the theoretical maximums.

–10.46 tCO₂-eq

The forest software of Graanul Invest allows collecting the required source data very rapidly and accurately. It permits us to model the carbon dioxide equivalent balance of our forests to an accuracy of a year. In 2019, the average sequestration per hectare was –10.46 tCO₂-eq. This was mainly facilitated by the 43% share of birch trees, whose nature, age, and growing volume promise rapid carbon sequestration in the coming years.

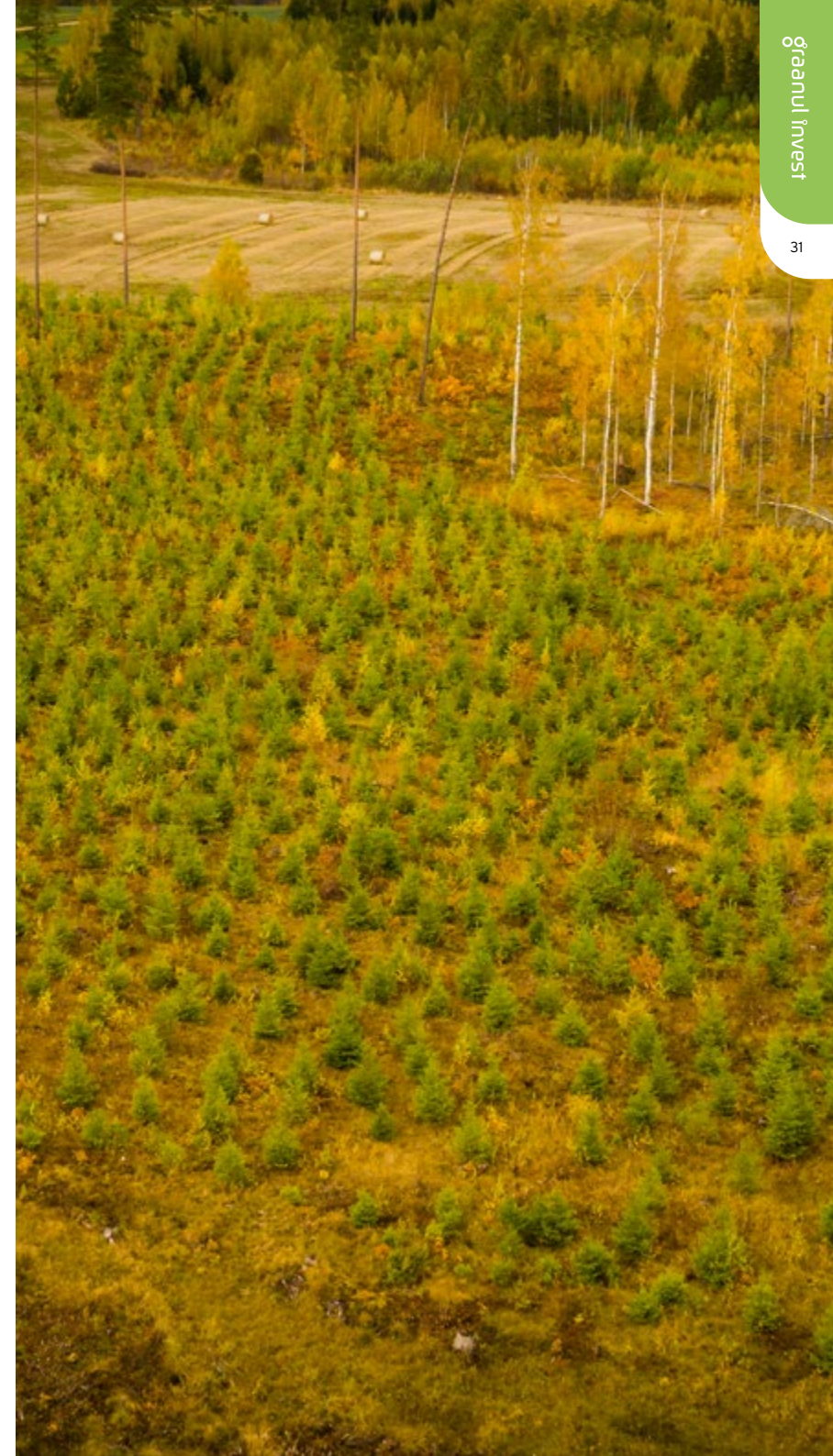


Specifications of the calculations

Graanul Invest admits that the calculations and modelling of the entire carbon balance are partly based on the default values of Europe and of the industry, which cannot be interpreted as the ultimate truth. Today, we can rely on the indicators of our emitting areas, as the collection and calculation of this data has been audited and deemed compliant with European renewable energy principles. The land use, land-use change, and forestry calculation principles for the industry still require further specification and more precise rules and Graanul Invest is carefully monitoring these developments.

According to our estimates, the carbon balance of the forest portfolio of Graanul Invest could be fully acknowledged and audited by 2022, when the first such standards will have been implemented. Still, the research work available about the forests of our region and the EFI carbon model is sufficiently adequate to ensure that the magnitude is correct. The fact of our carbon negativity would not change even if we had to adjust the model by 25-30% in an unfavourable direction. Such adjustments are not very likely.

For example, the changes in the calculating principles over the last few years have influenced the final result of our pellet production footprint by less than 5%.





Graanul Invest Group is continually developing new strategies and focusing on the future in its actions. We are looking for innovative solutions in everyday production and forest management, but also in new business developments. We cooperate with research institutions and international partners, and we aim to be pioneers in our fields.

4

Innovation

BIOMATERIALS

A novel flagship plant

The Graanul Invest Group has been developing a new direction of novel bioprocesses since 2017 to use lower-quality wood to develop and produce valuable biomaterials. A novel fractioning-based technology will be used, which allows the extraction of high-purity lignin and wood sugars from biomass with a minimum environmental footprint. The new-generation lignin and sugars can be used in various industries as a sustainable alternative for fossil materials, thereby enabling the marketing of environmentally friendly products.

In 2019, the development of bioprocesses at Graanul Invest reached the level of commencement of the construction of an experimental wood fractioning plant in Imavere, Estonia, which is unique in the world. The cornerstone of the constructed plant was laid in September 2019 and, by the end of the year, the civil engineering of the plant had reached the final stages. In 2020, it is planned to launch the experimental plant and start experimenting on the pilot line.

Graanul Invest has performed many experiments in several years of development with different technologies and chosen the best one, which enables the maximum valorisation of wood. The significant environmentally friendly advantages of the experimental plant to be constructed compared to the alternative solutions are:

- more than 90% of the low-quality wood used in the plant will be transformed into useful raw material for biomaterials and biochemicals;
- the novel production process will enable the production of next-generation lignin and wood sugars at the minimum consumption of energy and chemicals;
- the experimental plant will be using modern water treatment systems which will help to keep the majority of the water used at the plant in circulation and to recycle the water;
- the experimental plant will be working based exclusively on renewable energy, which will be generated by the combined plant on site;
- modular technology will enable the placement of the plant near raw material and thereby reduce the transport footprint.

The most significant positive impact of the unique experimental plant will, however, arise from the replacement effect of the products made at the plant. Lignin and wood sugars can be used as a replacement for various chemicals made from fossil fuels. Plywood is one good example, in the case of which, fossil fuel-based chemicals are mostly used for glueing the wood. We can replace a remarkable amount of these chemicals with substances manufactured of the lignin and wood sugars produced at the experimental plant, which will considerably reduce the environmental footprint of plywood production. Lignin can also be used in many other materials in addition to the plywood mentioned above: construction foams, insulation materials, concrete binders, active carbon, composite materials, resins, films, paints, and many other products which are used every day.

Wood sugars are a very suitable replacement for sugars made of agricultural raw material which are widely used in various fermentation processes that produce paints, plastic materials, detergents, packaging, textile, fuels, food industry products, or cosmetics as the end products.

Research and development work is taking place with hundreds of different partners and companies all over Europe for the potential use of our novel lignin and wood sugars. Once the experimental plant is launched, we can move from the development work to the production of several products in industrial volumes.

Lignin
Construction materials,
binders, foams



Wood sugars
Bioplastics, nylon,
chemical industries,
food industries

Flagship plant
90% of woody
biomass into
useful products



International cooperation projects

Graanul Invest and partners have been able to win grants for research in a very tight competition thanks to the novel approach to the pre-treatment of wood. The largest of the currently ongoing projects is **SWEETWOODS**, which is coordinated by a subsidiary of Graanul Invest, Graanul Biotech OÜ, and supported by institutional research funding from the Bio-Based Industries Joint Undertaking (BBI-JU), the most prestigious bioeconomy development grant in Europe.

An innovative demo plant will be constructed in Imavere within the framework of the project. The industrial partners of the SWEETWOODS project, Armacell, Recticel, and Tecnar, will be developing novel lignin-based recipes for manufacturing elastomer foams, polyurethane foams, and biocomposite materials. The technology partner, Metgen, will be developing industrial enzymes for the depolymerisation of lignin and the hydrolysis of sugars.

The project aims to demonstrate the production of highly pure lignin and sugars at the industrial level and to show the new opportunities for using these materials in various sectors, while also assessing their environmental impact and markets.

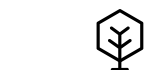
In the **REWOFUEL** project, we are mainly focussed on the development of the production of isobutene from wood sugars. We are testing whether lignin can be used as an alternative for bitumen in asphalt.

The **VEHICLE** project launched in 2019 is focused on the fractioning of the wood of interim products for the production of various polymer coating materials in cooperation with Kemira and Ecohelix. In collaboration with our partners Novamont and Avantium, we are valorising wood sugars into platform chemicals which are used to make packaging materials, textile materials, biofilms, plastic bottles, etc.

We realise that global problems can only be solved through strong and extensive partnerships and are therefore planning to continue our network with various cooperation projects in the future.

graanul invest

International projects



SWEETWOODS



REWOFUEL



VEHICLE

TECHNICAL INNOVATIONS

Developments of the LOADMON system

All Estonian and Latvian plants of Graanul Invest use the fully automatic feedstock reception measurement system LOADMON. The innovative LoadMon system is installed at the reception gate of the plant, where a point cloud or a 3D image is generated from each load in just a few minutes and without human input. In 2019, the system was developed further for use on trains, and several developments were added that are significant from the technical perspective.

Automatic measurement of train wagons

The first LoadMon 3D scanning and measurement gate for railway wagons was installed in our Gulbene plant in the last quarter of 2019. The system automatically detects the raw material volume in the wagons.

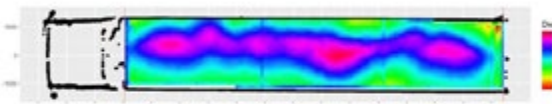
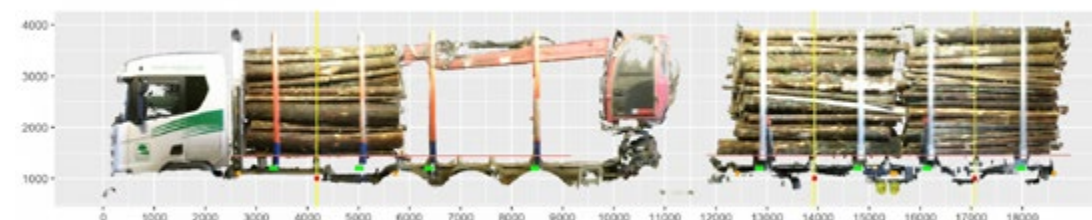
LoadMon for trains ensures the same transparency and overviews as LoadMon for trucks. The only difference is that the maximum volume of a truck is approximately 90 m³. In the case of a train, however, it may reach 2,000-3,000 m³. The system has already been used to process 200 delivery notes. In terms of volume, this is equivalent to more than 100,000 m³. Suppliers and the raw material supply department get an overview of the loads quickly and easily.

Our Latvian subsidiary Latgran has also commenced installing electronic markers on wagons which enable the automatic detection of the serial number of a wagon.

The technical developments of LoadMon

Several technical updates were added to the measurement system in 2019. Thanks to the optimisation of the software, we were able to bring the wood chip calculation speed to 30 seconds. Therefore, the measurement of one shipment of wood chips, including passing through the tunnel, takes 60 seconds. Previously, it took 90-120 seconds. The calculation time of roundwood is around 60 seconds now, but it used to be more than 120 seconds. On a larger scale, this enables saving a significant amount of time and increases our throughput capacity in busy shipping periods. Currently, LoadMon can measure 1,000 cubic metres of roundwood and 3,000 m³ of bulk material per hour.

A solution to the weakest link of LoadMon - the sensor on the barrier - has also been found. The system used to stop when the barrier broke. Today, most plants are equipped with a redundant system which enables the functioning even if the barrier breaks.



LOADMON
MEASURE IT

Economic forestry machinery

Valga Puu, a forestry company of Graanul Invest, acquired two next-generation Malwa harvesters in 2019, which helps to perform forest maintenance work more economically and sustainably than before.

The compact and lightweight new harvesters enable better manoeuvring in cleaning and thinning the forest and prevent ground damage that can occur during work, making maintenance more environmentally friendly for both the forester and forest in general. Cleaning and thinning are essential for forest growth and wood quality.

The Malwa harvester is an excellent aid in the maintenance of young forests considering its size. The harvesters of Valga Puu are equipped with 700 mm tyres, which significantly improve the distribution of weight and improve traction,



thus helping to preserve the forest floor. While navigating between young trees with large machines causes significant damage to them as well as the land, the new compact harvesters ensure the advantages of improved access and producing higher-quality material. According to the manufacturer, the weight of Malwa's novel machine starts from approx. 5,400 kg and its length is 5-7 metres.

In its compact but capable cutting head, the new harvesters can move forest material with a diameter as small as 3 cm, which allows thinning the forest without damaging it. Compared to large forest machinery, using the compact harvester allows leaving 100-200 more trees per hectare undamaged according to the manufacturer.



4.2.3 Developments of production solutions

We are continually working on developing our production solutions to make it more efficient and environmentally sustainable. Several of our production units enjoyed developments and investments in 2019:

The aspiration system in Alytus

In the last quarter of 2019, the Alytus plant made one of the most substantial investments of the previous few years with the installation of an aspiration filter which collects dust from different production units. The newly installed system enabled enclosing three pollution points which reduce the air pollution arising from particles, increasing the efficiency of production and making the production more environmentally friendly.

New wheel loaders

We have acquired two new wheel loaders which will be used to replace older and less efficient machines. The new loaders are equipped with the latest generation engines, which will reduce fuel consumption and the ecological footprint.

Reduction of the variable cost of cost components

We are consistently monitoring and developing the productivity of the main cost components. A large amount of data from our 12 plants allows us to analyse the manufacturers, materials, or test results of various cost components. Thanks to our integrated databases and analysis, we have been able to reduce the variable cost consistently.

The process sensors of conveyor dryers

We have added numerous process sensors to the conveyor dryers at the Imavere plant. Thanks to the new sensors, we can start monitoring the performance of the dryers in winter conditions and thereby reduce the energy consumption of the production.

A smart solution at the combined plants

Our combined heat and power plants in Osula, Helme, and Imavere have started using the Inspection application, which assists the personnel in charge of the operating and maintenance of sophisticated equipment.

At a combined plant, many pieces of equipment are working at high speed and temperature and under high pressure. There are hundreds of electric engines and sensors in a plant, and if only one of them fails or breaks, the entire combined plant will likely stop. The purpose of the new smart application is to guide the employees of the combined heat and power plant. If the app is accurately followed in the course of an inspection round, it is guaranteed

that the employee will reach all critical pieces of equipment at the prescribed time to inspect them visually.

The other aim of the application is to use the entered information immediately. The staff can now obtain information about the current situation of the equipment at any point in time, which allows the personnel to plan further actions (operating, maintenance, repair works) based on current events.

Thanks to the timestamps, it is also possible to assess the quality of the inspection tours and to schedule inspection specific refresher training for the employees, if necessary.

A new planting machine

Valga Puu acquired a new planting machine in 2019, which is the first of its kind in Estonia. The planting machine allows planting potted plants over a more extended period of the growing season and in waterlogged locations.

The short-tail 16.1-tonne excavator is modified for working in forests and on soft ground and can create approximately one hectare of trees with approximately 2,000 plants, depending on the initial density.

As the machine plants potted trees and does not carry a surplus amount of them, they do not dry out, which can happen with conventional planting techniques.

Ideally, the machine could be used for planting from April to October. Based on an agreement with a nursery, the company will be supplied with plants directly from the open field or refrigerator

in this period. The novel planting machine simultaneously performs two operations - preparing the ground and planting the seedlings - making

the planting quality uniform. The machine places the plant in the middle

of the turf and then compacts the soil. A tree seedling is planted in the

turf and, in the ideal case, the machine will make regular follow-up regeneration quality inspections unnecessary. The turf gives the tree seedlings an immediate advantage over grass and other brushwood. Irrespective of the location and the growth of brushwood and grass, no maintenance is required in the first few years.

The new machine also enables planting in waterlogged areas, where it is not possible to regenerate the forest with other technologies due to the wet conditions.

New wood chippers

Graanul Hake, a company of the Group, supplies our combined heat and power plants with residues collected by our forest companies, which can generate one million cubic metres of wood chips per year.

In 2019, Graanul Hake acquired four high-capacity Jenz wood chippers, which provide excellent service at a low maintenance cost. Jenz has been consistently developing their chippers, and the novel solutions they have created and the options for setting the different assemblies of the devices ensure several advantages compared to other manufacturers. For example, elements coated with a layer of Durox hard surfacing alloy are used in the main wear parts, which last up to three times longer than usual.

The operator's seat has been moved from the lift to the position of the passenger seat in the cab, which significantly improved the working conditions of the operator - above all, the amount of noise and vibration was reduced and the general safety and climate conditions improved (with a controlled temperature cabin and a dust-free environment).

Both the wood chippers and the trucks and trailers which transport wood chips are equipped with double wheels (except the turning wheels), which reduce the specific pressure on the ground. This solution is easier on the forest roads and improves the grip in difficult conditions.





RESEARCH COOPERATION

A doctoral project on wood valorisation

In 2019, a doctoral project on novel chemical wood valorisation was launched as a collaboration between Graanul Invest of the Graanul Invest Group and the University of Tartu.

Kait Kaarel Puss, a doctoral student of the University of Tartu, will be studying the characteristics of the lignin obtained from wood for his doctoral thesis and will cooperate with Graanul Biotech in developing an industrially usable lignin solution process.

The applied research aim of Puss' doctoral thesis is to develop various technological solutions for researching the characteristics of wood-based lignin and creating a marketable final product. Puss is optimising the stages of lignin within the framework of his development work to improve its usability and obtain a detailed overview of the impact of industrial processing methods of its characteristics.

In the course of the first-time initiative, a platform was created between the Core Laboratory for Wood Chemistry of the University of Tartu and Graanul Biotech for training top specialists based on the needs and the profile of the company and for cooperation in the field of applied research and product development.

The joint doctoral project is the first specific cooperation project with the university, and it provides an excellent opportunity to include the latest developments of top-level research at an early stage in product development and thereby significantly increase the company's competitiveness in the area of novel materials.



A cooperation project on forest plantation development

Valga Puu, which is a member of the Graanul Invest Group, and the Estonian University of Life Sciences launched a long-term cooperation project in 2019 for the development of forest plantations. After a 10-year cooperation agreement was signed, Valga Puu started supporting the research project of the Estonian University of Life Sciences for the selection and management of deciduous tree stands.

The working group led by Hardi Tullus, professor of silviculture and forest ecology at the Estonian University of Life Sciences, has been experimenting for years with quickly growing deciduous trees in the Estonian climate and soil conditions. The research project aims to select rapidly growing species which are suitable for local use. After the project is completed, forest researchers will be able to offer the results of long-term experiments in the field of silver birch, hybrid aspen, and black alder.

Valga Puu, a forest management company, will implement the results of the research in its activities to create forest plantations in Southern Estonia which are resistant to diseases and consist of trees with high-quality trunks. The company owns plots of land, including areas lying idle, which currently have no good use. But the company is hoping to find solutions for these plots with the help of the research work on rapidly growing deciduous trees done by the research team. A long-term aim of Valga Puu is the forestation of land with a suitable tree species which have been left out of agricultural use.

The total cost of the project is 100,000 Euros.



Social impact

5

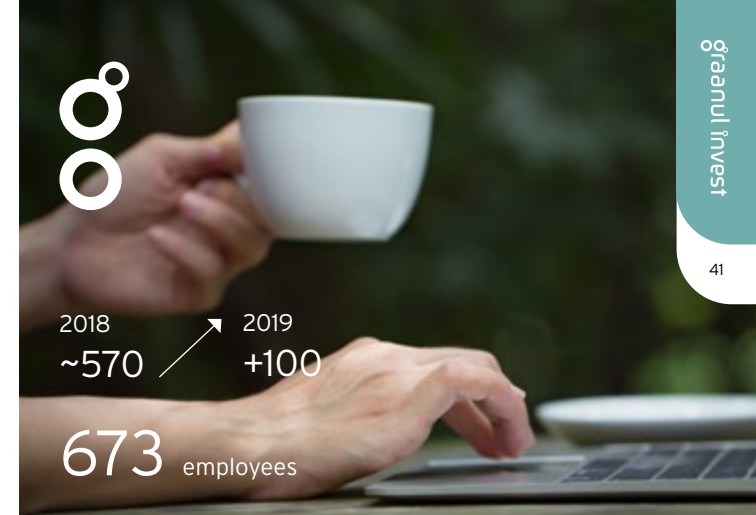
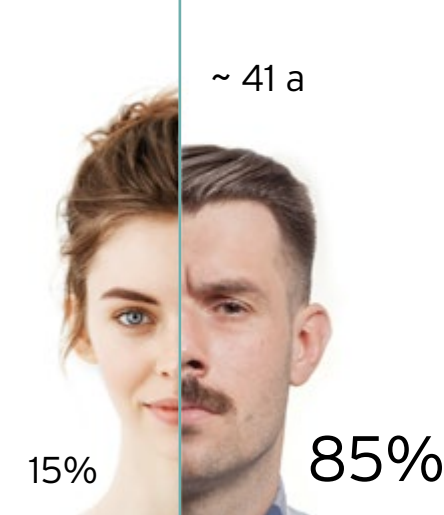
Forestry is one of the leading employers in rural areas in Estonia. Over the years, Graanul Invest has supported the local communities according to regional needs. Many of the people in our Group also work in rural areas, and it is therefore particularly important for us that life progresses beyond the bigger cities. We perceive our responsibility to society and for the environment, and we are actively participating in meaningful discussions and policy-making processes.



Employees

As at the end of 2019, the Graanul Invest Group employed 673 employees, which is over 100 people more compared to the year before. A large number of the employees were added with the acquisition of a plant in the United States.

The average age of the employees of the Group is 41 years, and approximately 85% of the employees are men.



A new occupational safety measure

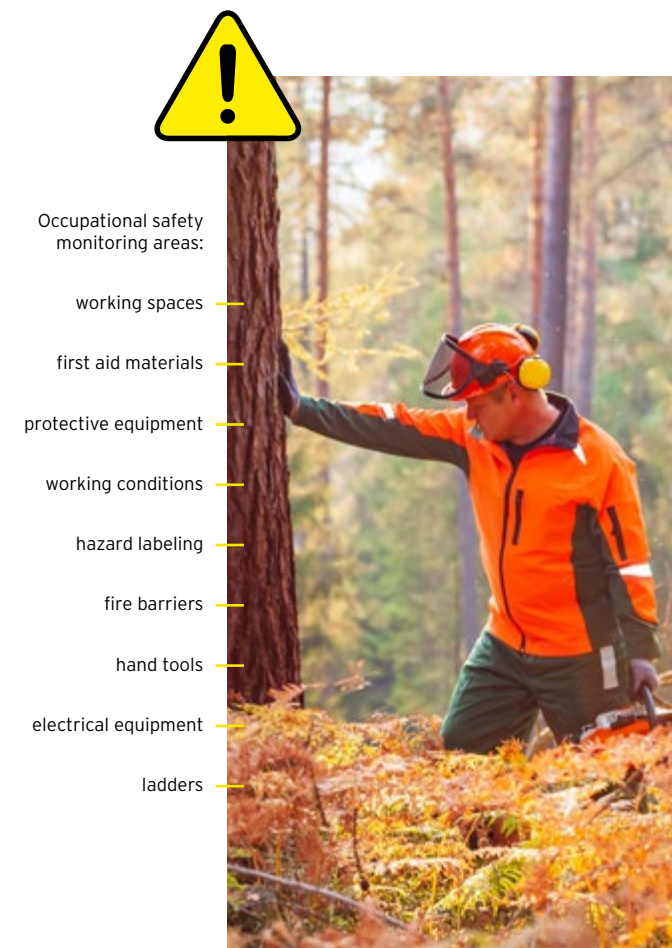
Graanul Invest implemented a new occupational safety monitoring and improvement system for 2019 to identify the root causes of occupational accidents and to prioritise occupational safety-related activities. This system, which in addition to the accidents, also considers the results of quarterly internal audits, the general visual and technical order, and the number of employees. Thereby, our company gained an occupational safety measure which highlights the deficiencies as well as the progress made in this area to an accuracy of the location and operation. This, in turn, allows us to increase the efficiency and accuracy of the potential improvement measures.

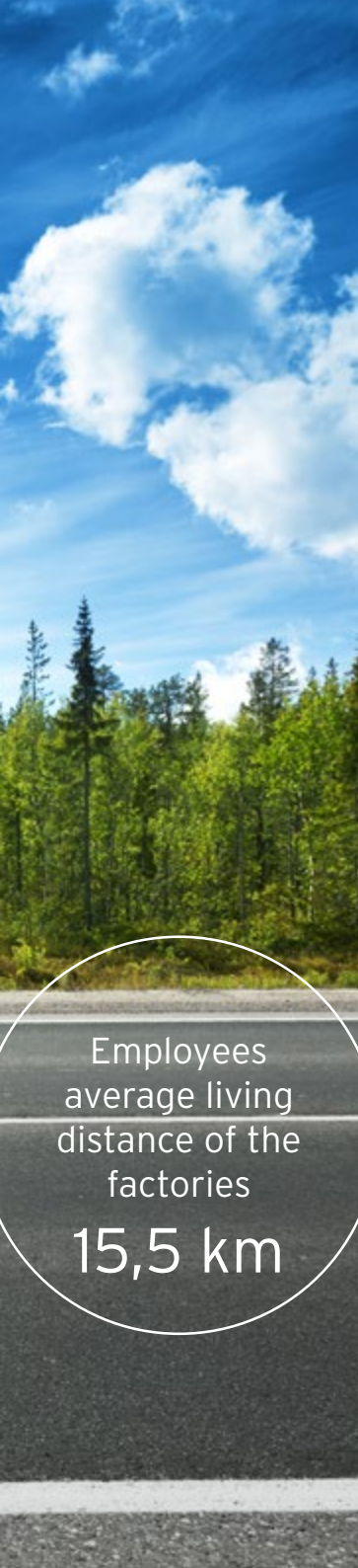
Occupational safety measurements are conducted in our plants four times per year. The findings recorded, accidents and activities of each quarter are used to calculate the individual coefficient of each plant.

Because the system was still new and a bit unfamiliar to the workers, the results were satisfactory. Nine of the 11 factories achieved the target set (< 1) and the overall level of occupational safety increased at all of our factories. The best level was 0.54 and the worst 1.59, which indicates that different units require action to a different extent and substance to improve occupational safety. The average result of the Group was 0.81, which is still a positive surprise because the target set for 2019 was based on historical figures and was deliberately set at a stringent level.

Organising routine safety and first aid training, as well as specific third-party training for higher-risk operations, continued in 2019. In the field of fire safety, we have modernised and improved the fire safety plans of several factories in cooperation with our partners.

In 2019, 1.18 occupational accidents occurred per 100 employees. In 2018, this figure was 0.87. The increase in the number of occupational accidents is related to the newer areas of activity of our Group. At the pellet factories, the ratio of occupational accidents and employees has improved. Regardless, we must expand our efforts to reduce the number of accidents and make sure that safety is our top priority in every new operation and at every new subsidiary.





Regional impact

All of the 12 pellet factories of Graanul Invest are located away from larger cities, and are important employers in rural areas. The forestry companies of the Group have also focused their activities outside of the centres. Using regional opportunities and providing jobs to people near their homes supports regional development and enables bringing people back to their homes in the long term. In those locations, the contribution of forestry and the timber sector to the quality of life in rural areas is remarkable. The added value created by the sector forms a third and almost a quarter of the total added value created in Central Estonia and Southern Estonia, respectively.

Graanul Invest employees living distance of the factories

- Imavere 17 km
- Osula 5 km
- Ebavere 7 km
- Helme 4 km
- Launkalne 25 km
- Inčukalns 27 km
- Gulbene 30 km
- Jaunjelgava 15 km
- Jēkabpils 13 km
- Krāslava 13 km
- Alytus 14 km



We supported more than 70 different initiatives all over the Baltic states in 2019.



THE SOCIETY

Supporting the community

The supporting activities of the Graanul Invest Group are based on the needs and wishes of smaller regions. We have carried on with a principle where our factories and forest companies support local initiatives and actions locally since they are the best judges of the needs of the area for support and have a connection with the community.

Through our plants in Estonia, we have supported the activities of the youths of Imavere Sports Club NGO, the hobbyists of the Väike-Maarja Gymnasium, the activities of Võru Ski Club, and the local volleyball team of Tõrva. In Latvia, we supported the development of the playground of a local nursery school, a motorsports festival, basketball and volleyball teams, and made Christmas presents for orphans, among other things.

The greatest supporter among our forest companies was Valga Puu, which contributed to the development of youth sports, as well as to a foresters' male choir and sponsored a javelin thrower, Magnus Kirt. Karo Mets has been a great support of youth cycling throughout the years and also started sponsoring the Kaisma hiking trail in 2019. Roger Puit supported various youth sports activities in Viljandi County and the Estonian Forestry Students' Association, like some other forest companies.

The Graanul Invest Group supported more than 70 different initiatives all over the Baltic states in 2019 and contributed over 170,000 Euros to promoting local sports, cultural, and educational life.

We want to support local communities with our activities and help to create opportunities for finding oneself outside of bigger cities. In the future, our sponsorship activities will continue to be focused on creating development opportunities for young people.



Long-term support projects

Graanul Invest has been a volleyball supporter for years and, since 2019, we are also a sponsor of the Estonian men's national team in addition to supporting the Estonian youth team. Our Latvian subsidiary Latgran entered into a long-term contract for supporting the Latvian youth team in 2019. The employees of our Group have always valued volleyball – people play the sport regularly, all our companies put together teams for our summer days, and volleyball watching events have also been organised.

Graanul Invest has also been supporting Estonian skiing and the Estonian Ski Association with financial support as well as active cheering. We supported the participation of our employees in sports competitions and took part in the Tartu Ski Marathon as a team in 2019.

Cooperation with the University of Tartu Youth Academy was a long-term support project launched in 2019.

Graanul Invest is making a long-term contribution to the development of the in-depth studies of natural sciences and wood sciences to increase the awareness of young people of the opportunities and potential of the field. The financial support will be used to fund the integrated studies of natural subjects at the research lab, basic school biology competitions, and natural science competitions. The support enables developing experimental tasks in the field of wood technology and creates an opportunity for young people to meet various experts. The students arriving from international competitions with medals will also be awarded Graanul Invest scholarships.

In 2019-22, Graanul Invest will be supporting the studies of natural sciences with more than 65,000 Euros in total. We believe that contributing to the study of natural sciences is an investment in the future, the fruits of which will only be seen after quite a few years when the students will be choosing their specialities at universities.

Policy development



Graanul Invest also actively participates in significant discussions and policy development processes through various organisations and associations. In 2019, Raul Kirjanen, the CEO of Graanul Invest, was confirmed as a member of the Estonian Government's innovation policy committee compiled of experts of the field, the aim of which is to prepare the strategic regulation plan of the research and economy and shaping of innovation-related policy.

As a representative of the Estonian Renewable Energy Association, Kirjanen was included in the managing committee of the forestry development plan in 2019, which aims to achieve a consensus in choosing the development scenarios for forestry at the beginning of the new decade. Since 2019, Kirjanen is also a member of the supervisory board of the Estonian University of Life Sciences. The supervisory board is the highest management body of the university, which is responsible for the long-term and sustainable development of the university and for making important decisions. Kirjanen and Jaano Haidla, both board members of Graanul Invest, are also included in the management board of the Estonian Forest and Wood Industries Association.

Mihkel Jugaste, who is in charge of sustainability at the Graanul Invest Group, was elected to the SBP (Sustainable Biomass Program) Standards Committee for the next three years. The Standards Committee is a representation of SBP stakeholders, with the membership split 50-50 between those representing civil society and those representing commercial interests. The elected committee is tasked with setting the standards for the certification system and giving advice and recommendations to other SBP committees and the management board.

BUSINESS ETHICS

The business principles of Graanul Invest attracted our current team and helped us map the most significant partners who share similar views, which allows us to implement those principles more extensively. We aim to create a safe working environment and an environmentally friendly and efficient production process that will enable us to create environmentally friendly products of the best quality.



ECOLOGICAL FOOTPRINT

Our goal is to reduce emissions. Collection and destruction of pollutants is very significant, but all processes and technological solutions must, above all, generate as little pollution as possible. We carefully monitor that the applicable environmental regulations are complied with in our companies and continuously measure the indicators of environmental pollution and resource efficiency. When making decisions and investments, we always assess their impact on the environment.

TEAM

The people working in Graanul Invest Group are one of our most consequential pillars. Our team consists of properly qualified employees. We actively train our people to raise their awareness about quality, the environment, energy efficiency, occupational health, and emergency response. We also actively support the fitness and sports activities of our employees to encourage a healthy mind and body.

COOPERATION PARTNERS

We only work with partners who operate based on the same principles of quality, environmental and occupational safety and energy efficiency as us. We only use suppliers who adhere to standards of sustainable forestry and offer products that meet all requirements. We expect our partners to conduct regular third-party inspections and encourage mutual inspections.

QUALITY

The quality of both the product and the company itself is essential for us. We manufacture our products according to the requirements of the market and our customers, and we always ensure consistent and timely deliveries. We welcome criticism from customers and stakeholders and improve our systems accordingly.

CONTINUOUS IMPROVEMENT

We set our short-term and long-term goals based on the core values and performance indicators of our company. We continuously monitor our work results and regularly review our targeted goals to ensure continuous improvement. We encourage the involvement of experts and third parties in our company to identify bottlenecks and assess the impact and relevance of objectives and improvements.

TRANSPARENCY

Increasing transparency and reducing the risk of corruption are an integral part of our activities. We continuously raise awareness, enter into contractual relationships, enable electronic payments, and conduct regular audits. In doing so, we have created a system that does not permit unethical behaviour in our value chain.

