The Biofore Company UPM

UPM Jämsä River Mills

Environmental and Societal Responsibility 2017

UPM Jämsä River Mills

UPM's Jämsä River Mills – Jämsänkoski and Kaipola – are located in the Jämsä River Valley in Central Finland. The Jämsänkoski mill is located on the banks of the Jämsänjoki River, and the Kaipola mill stands on the edge of Lake Päijänne.

The mills function as a unit, with a total of six paper machines in operation. Uncoated magazine paper and label and packaging papers are produced at the Jämsänkoski mill, while coated magazine paper, catalogue paper and newsprint are produced at the Kaipola mill.

The main raw materials used in paper production at Jämsänkoski are mechanical pulp made of spruce pulpwood for the magazine papers, and chemical pulp, sourced from UPM's own mills or the market, for label and packaging paper. In Kaipola, the main raw materials are spruce pulpwood, recovered household paper and spruce sawmill chips.

Both of the mill sites include a debarking plant, a TMP plant, a water plant, a biological effluent treatment plant and a power plant. The Kaipola site also includes a deinking plant for recovered household paper. At both mill sites, the heat and a small portion of the electricity required for mill processes are produced by the mill's own power plant. Heat is also is recovered from the TMP plants.

The water used at the Jämsänkoski mill is sourced from Lake Koski-Keskinen and the Iso-Ryöni ravine, while the water source for the Kaipola mill is the Tiirinselkä in Lake Päijänne.

Production capacity	1,345,000 tonnes of paper
Personnel	841
Products	**Magazine paper:** UPM Cat, UPM Impresse, UPM Impresse Plus, UPM Max, UPM Max S, UPM Smart, UPM Cote, UPM Ultra, UPM Ultra Silk, UPM Valor **Newsprint:** UPM News, UPM Brite, UPM Book, UPM Color, UPM EcoBasic, UPM EcoLite, UPM EcoPrime, UPM Opalite, UPM Opalite Plus **Label and packaging paper:** UPM Label Papers, UPM Packaging Papers
Certificates	EMAS – EU Eco-Management and Audit Scheme ISO 14001 – Environmental Management System ETJ+ – Energy Efficiency System ISO 9001 – Quality Management System ISO 22000 – Food Safety Management System OHSAS 18001 – Occupational Health and Safety System PEFC™ Chain of Custody – Programme for the Endorsement of Forest Certification FSC® Chain of Custody – Forest Stewardship Council All certificates can be found from UPM's Certificate Finder (available at www.upm.com/responsibility)
Environmental labels	EU Ecolabel

UPM Jämsä River Mills Environmental and Societal Responsibility 2017 is a supplement to the Corporate Environmental Statement of UPM's pulp and paper mills (available at www.upm.com) and provides mill-specific environmental performance data and trends for the year 2017. The annually updated mill supplements and the UPM Corporate Environmental Statement together form the joint EMAS Statement of UPM Corporation. The next Corporate Environmental Statement and also this supplement will be published in 2019.

UPM leads the forest-based bioindustry into a sustainable, innovation-driven, and exciting future across six business areas: UPM Biorefining, UPM Energy, UPM Raflatac, UPM Specialty Papers, UPM Paper ENA and UPM Plywood. Our products are made of renewable raw materials and are recyclable. We serve our customers worldwide. The group employs around 19,100 people and its annual sales are approximately EUR 10 billion. UPM shares are listed on NASDAQ OMX Helsinki.
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Review of the year 2017

UPM promotes responsible practices throughout the value chain and actively seeks sustainable solutions in co-operation with its customers, suppliers and partners. Creating value for society, both as a company and through our products, is an essential part of UPM's Biofore strategy.

During 2017, the Jämsä River Mills continued to further develop their operations. This development work focused on ways to improve the cost efficiency of production and to make working methods even more flexible. Safety and environmental aspects are central to the mills' operations.

The annual production of the Jämsä River Mills was slightly higher in 2017 than in the previous year. The development project to reduce energy consumption in the production of mechanical pulp at Kaipola is ongoing. The project will be completed in the first half of 2018. A permanent reduction in the availability of recovered paper has decreased the production volume of deinked pulp, and the production capacity of mechanical pulp is being increased accordingly.

Rupture of a waste water pipe at Kaipola

Early on 14 October 2017, a rupture was detected in a waste water pipe at the Kaipola mill. The waste water pipe had ruptured approximately 150 metres away from the waste water pump station at the mill. Production was shut down to minimise the flow of waste water from the mill. The backup waste water line was also taken into use.

As a result of the damage to the waste water pipe, approximately 3,000 m^3 of waste water leaked into the environment. An investigation revealed that the foundation had given way beneath the waste water pipe at the point of rupture. As a result, a portion of the pipe had started to sag and crack, apparently due to stress caused by traffic. The affected sections of waste water pipe and pipe foundation were reconstructed.

The environmental authority of the Central Finland Centre for Economic Development, Transport and the Environment was notified immediately of the damage to the pipe and resulting discharge. As was agreed with the environmental authorities, the environmental impact of the waste-water discharge was investigated by an external entity, who took water samples at two sampling locations in Tiirinselkä, in accordance with the Joint Monitoring Programme for Central Päijänne. The results of the first round of sampling showed that the discharge had resulted in increased nutrient levels near the mill, while the impact in the middle of Tiirinselkä was minimal. The results of the second round of sampling showed that amount of nutrients had returned to pre-rupture levels. While the discharge was a major deviation, its impact was localised and short term. A failure report concerning the incident was filed with the environmental authorities.

In accordance with UPM policy, a root cause analysis was carried out and corrective measures were agreed upon. Information about the incident was also shared with other UPM mills. Information about the ruptured waste-water pipe was issued to the media and shared on the Jämsä River Mills intranet.

Feedback from local residents

We have received complaints about odours from the mills' waste-water treatment plants, especially from residents living near the Kaipola mill. During 2017, we focused on the continuous monitoring of waste water hydrogen sulphide levels in order to determine what production situations are prone to the formation of odour-causing hydrogen sulphide. The hydrogen sulphide detected in the waste water at the mill's treatment plant indicates that it is possible that odours have occurred in nearby residential areas. The measurements relate to one point in the process; the occurrence of odours in nearby residential areas also depends strongly on the weather and the direction of the wind.

The continuous monitoring of hydrogen sulphide has demonstrated that, regardless of the production situation at the mill, from time to time, large quantities of hydrogen sulphide occur in the waste water, while at other times it does not appear at all. The low pH of the waste water, as well as sulphur compounds in the waste water that originate from raw materials and bleaching chemicals, contribute to the formation of hydrogen sulphide. Permanently maintaining the pH of the entire volume of waste water at the desired level throughout all phases of the treatment process has proven to be extremely difficult. For the time being, the most effective way to prevent odours is to oxygenate effluents. Both mills have been employing this method for several years. Work to prevent odours will continue in 2018, in co-operation with selected external partners.

Product safety

Customer enquiries regarding our products mainly related to product safety, certification of the sources of wood raw materials and forests, and the use of environmental labels. Product safety is especially important in the case of label and packaging papers that are used by the food industry. Our label papers are certified for use in contact with food, guaranteeing that the products comply with German BfR recommendation No. XXXVI and US FDA Regulation 21 CFR, parts 170 to 189. The ISO 22000 certificate held by the Jämsänkoski Speciality Papers unit guarantees that

our operations meet the demands of the standard as part of the food supply chain. The raw materials used in our products are suitable for end use with food products, and our processes and products comply with cleanliness requirements. The raw materials that we use and our end products are always traceable.

External assessments
Our operations have been assessed by independent, external experts. The external audit of the ISO 14001 environmental system, the ISO 9001 quality system, the ISO 22000 product-safety system, the OHSAS 18001 occupational health and safety system and the ETJ+ energy-efficiency system that was undertaken in the autumn noted a total of ten minor non-conformities. Corrective measures and timelines for implementing them have been set for all minor non-conformities.

Based on feedback from the external audit, safety non-conformities detected in our operations have been investigated and reported clearly and comprehensively. The most serious dangers and risks have been identified, and the most significant risks have been eliminated. Our risk assessment is updated regularly. We have produced detailed work instructions for high-risk work tasks. In addition, the top 5 risks for every work station have been identified, and based on those risks, safe working methods have been defined. Evacuation drills involving all personnel are conducted regularly.

Based on feedback from the audit, Jämsänkoski Specialty Papers is working in close co-operation with UPM Tervasaari to further develop product safety. Employees are well trained in product-safety requirements and thoroughly understand product-safety matters related to their own work.

UPM's internal environmental audit was completed in the autumn. A mill tour of the mill revealed a lack of up-to-date safety data sheets at some chemical unloading sites. Based on feedback from the audit, environmental matters are, on the whole, being handled according to best practice. The rupture of the waste-water pipe in Kaipola demonstrates that despite the regular risk assessment of various operations and continuous monitoring, sudden damage to equipment or equipment failures are possible.

UPM's internal advisor on the transport of dangerous materials performed an audit of the Jämsä River Mills in August. Mill tour at the mill revealed that, on the whole, the sites where chemicals are handled and unloaded were well maintained and clean. Chemical safety is also regularly audited through internal inspections. Training on the safe use and handling of chemicals was organised for all personnel.

Increased attention to energy efficiency
UPM strives to continuously improve the energy efficiency of its operations. Through energy audits, projects to conserve energy in the production of mechanical pulp, and internal campaigns, the energy efficiency of production has improved significantly over the long term.

The Jämsä River Mills provide an annual report on the previous year's energy consumption and measures taken to improve energy efficiency to the Motiva monitoring system. The mills' goal is to implement energy-efficient technologies when technically and financially feasible, taking health, safety and the environment into account. In November, an internal UPM energy audit was carried out at the Jämsänkoski mill, and the ideas generated by the audit will be deployed in production units wherever possible.

Environmental permit review applications
The Kaipola mill filed an environmental permit review application at the end of 2015. The environmental permit review was based on the entry into force of the BAT conclusions on pulp, board and paper production published in 2014, and on the clarification of the permit regulation concerning noise. The permit decision was issued in February 2017. An appeal has been filed and the decision is not final.

The Jämsänkoski paper mill received an environmental permit decision at the end of 2016. An appeal has been filed and the decision is not final. The environmental permit application was filed because it was necessary for the

permit to be reviewed to conform with changes in the mill's operations, the BAT conclusions and the new Environmental Protection Act.

An environmental permit review application for the Vierelä landfill site in Jämsänkoski was submitted to the Regional State Administrative Agency for Western and Inland Finland in the autumn of 2014. No permit decision has been issued. Power plant ash is being temporarily stored at the Vierelä landfill site as needed.

An environmental permit application for the Pitkäniemi landfill site in Kaipola was submitted in August 2017. The application concerns the suspension of landfill operations, the intermediate storage of waste being directed to recovery and measures to be taken in the waste-disposal area that will be closed.

The updated Joint Monitoring Programme for Central Päijänne was approved in September 2017, and the programme is in effect indefinitely. The programme includes the monitoring of the environmental impact of the Jämsä River Mills on water systems and fisheries. Both mills pay fisheries fees as laid out in their environmental permits, and the plan for using the fisheries fees was confirmed at the end of 2017.

The environmental impact of the mills, in terms of watercourses and fishery, is monitored by the Eurofins unit in Jyväskylä (previously Nab Labs Oy). The monitoring is carried out in accordance with the programme approved by the Centre for Economic Development, Transport and the Environment, in co-operation with the Water and Transport Authority of Jämsä. Air quality is monitored in co-operation with the city of Jämsä and Jämsän Aluelämpö Oy.

Wellbeing at work

UPM has continued with its quarterly changing global health and safety themes. In 2017 themes included organisational climate, travelling, as well as health and a hectic life.

Absenteeism due to sickness in the Jämsä River Mills is low compared to general and industry averages. In order to advance wellbeing at work, we employ methods such as alternative work assignments and early intervention. In addition, two customised wellbeing projects designed for the Jämsä River Mills were initiated in 2017.

Safety

Our permanent target is to prevent all accidents. Our management system enforced through the "Step Change in Safety 2012–2014" initiative provides a solid foundation and systematic approach. The results and observations of all the audits of our safety processes are an integral part of our continuous safety improvements. Occupational health and safety focus areas in 2017 were risk management, process safety and the implementation of six life-saving standards.

A culture of safety stems from each person's own attitude. It is shown in the quality of individuals' actions, their attitudes and working methods, and in how they work with others. A culture of safety is not inherent, but is learned by living and operating in a working community. Bearing this in mind, the Jämsä River Mills have launched a safety training programme that aims to strongly support the development of a culture of occupational safety. In 2017, 130 managers and experts from the Jämsä River Mills took part in the training programme. The employee training programme will continue in 2018.

Pia Siirola-Kourunen, Environmental Manager

Antti Hermonen, General Manager

UPM Jämsä River Mills

Responsibility figures 2017

Waste

Amount of waste taken to landfill

0 kg

Waste is recovered as materials or for energy

Power plant ash directed to reuse

100%

Ash recovered for soil improvement and construction

Certified fiber

87%

PEFC- and FSC-certified fibre

UPM's target: All fibre certified by 2030

Recycled fibre

27%

of the fibre used at Kaipola

Taxes

Mill's tax impact approx.

EUR 31 million

Real estate tax EUR 0.8 million

Estimate of tax on salaries EUR 8.7 million

Estimate of corporate income tax EUR 21 million based on the number of employees*

* share for all the municipalities approx. 30%. Each municipality receives a share of this depending on the ratios calculated based on business and forest operations in the municipality

Safety

4,564

employee-recorded safety walks, observations and discussions

Consumption impact

Mill's consumption impact in region approx.

EUR 39.8 million

in Finland approx.

EUR 70 million

Supply chain

99%

of raw materials spend (excl. wood) qualified against UPM Supplier and Third Part Code

UPM's target: 100% of raw material spend qualified against UPM Supplier and Third Party Code by 2030

Health

Participants in UPM's wellbeing initiatives

71 employees

from the Jämsä River Mills. The goal was to support employee wellbeing and enable employees to take care of themselves.

Absenteeism due to sickness and accidents

3.8%

Includes accidents at work, while travelling for work and during free time

1,418

training days during the year

Employment

841 jobs

+ 145 summer jobs

Indirect employment effect in region approx. 920 persons

Energy

Biomass-based fuel

74%

of the fuel used by the power plants

Air

Emissions from the power plants were below permit limits. Total fossil carbon dioxide emissions decreased slightly at both the Kaipola and the Jämsäkoski power plants. The share of forest bioenergy and sawmill wood residues grew compared to the previous year, leading to a small corresponding decrease in the use of peat. Other emissions decreased or remained at the previous year's level. A new regulation model for combustion control was implemented at the Jämsäkoski power plant. This will help to improve burning, in terms of the management of nitrogen oxide and CO emissions, as well as overall efficiency when compared with earlier regulation solutions. Similar regulation models were adopted in Kaipola at the end of 2016.

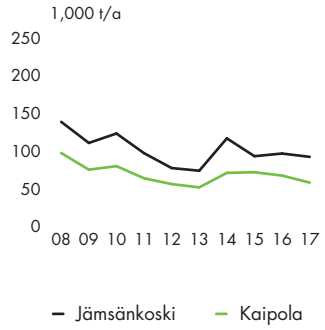
The use of biomass-based fuel – forest bioenergy, bark and sludge – increased slightly compared to the previous year. Their share of all fuel was over 70%. At both power plants, the use of oil was minimal, at less than 2%.

Particulate measurements have indicated that the average air quality in the town of Jämsä has, for the most part, been good. During the spring street-dust season, particulate measurements have shown air quality to be satisfactory. The key sources of particulates in the air are traffic, the heating of buildings and a variety of diffuse emissions. Monitoring has shown that industrial and energy production plants generate very few particle emissions.

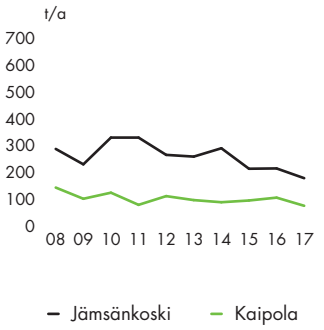
Most nitrogen emissions in the Jämsä region come from road traffic and the production of energy. The concentrations of nitrogen oxide measured in the

SPECIFIC EMISSIONS FROM THE POWER PLANT'S MAIN BOILER, Jämsänkoski

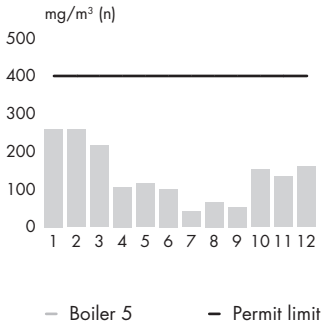
Fossil carbon dioxide, CO_2



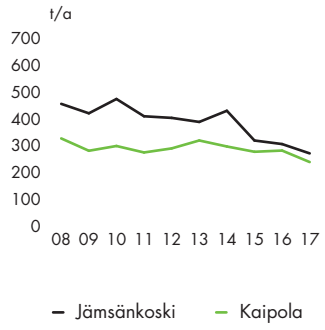
Sulphur dioxide, SO_2



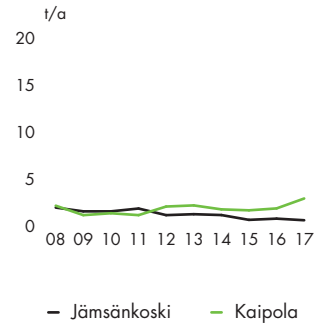
Sulphur dioxide, SO_2



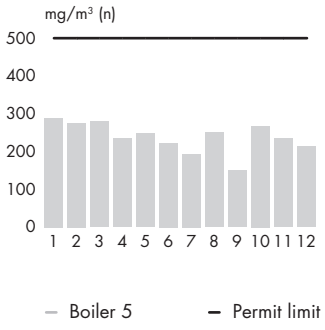
Nitrogen oxides, NO_x



Particulates



Nitrogen oxides, NO_x



Waste

town centre are below the guideline value.

The Supreme Administrative Court of Finland issued a decision, setting the K4 particulate emissions limit for Kaipola's backup boiler at 50 mg/nm^3.

One of UPM's global objectives is that by 2030, no process waste of any kind, and at any UPM location, will be disposed of in landfills or burned without recovering the energy produced. The objectives support the United Nations' global sustainability objectives for 2030.

The Jämsä River Mills are forerunner in achieving UPM's objectives concerning the reduction of waste. Processes have been developed to minimise the generation of waste, and the fractions that are generated are reused, mainly by means of recycling. Since the beginning of 2016, no waste has been taken to landfill from the Jämsä River Mills. All waste generated is reused, either as is or after further processing. Fractions that the mill and other operators cannot use as materials are used as sources of energy. As transporting fractions far from the mill for further processing is not financially or environmentally cost effective, local partners play an important role in meeting this objective. The amount of waste generated by the Jämsä River Mills was on par with the previous year.

In both mill units, ash from the power plants constitutes the largest waste fraction. The amount of ash remained

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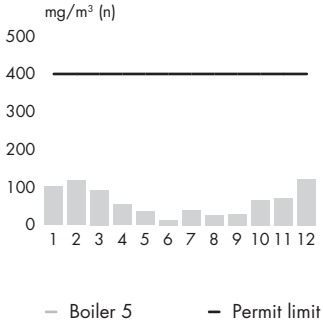
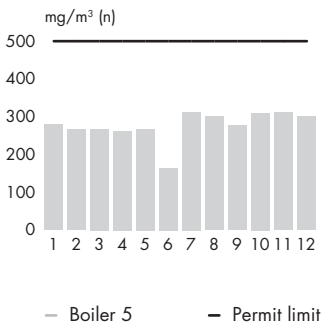
SPECIFIC EMISSIONS FROM THE POWER PLANT'S MAIN BOILER, Kaipola

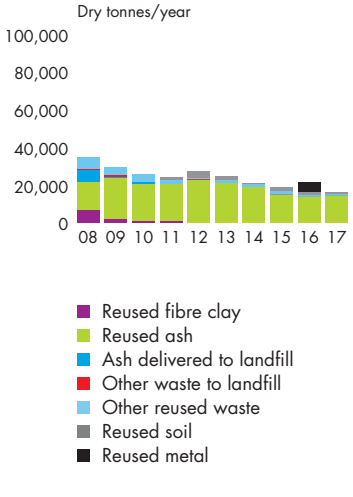
Sulphur dioxide, SO_2



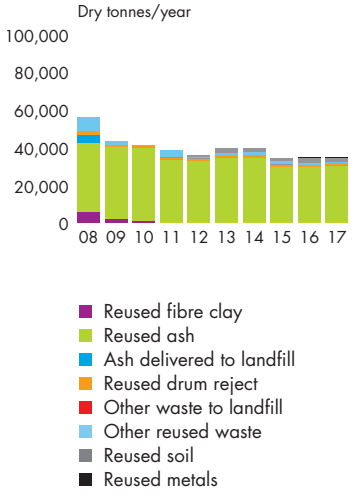
Nitrogen oxides, NO_x



Process waste, Jämsänkoski



Process waste, Kaipola



Water

at the same level as in the previous year. All of the ash produced was reused. A significant portion of the ash was used for soil improvement, mainly in crop fields. The ash contains high amounts of calcium, and also important trace elements, such as magnesium and potassium. The ash complies with the requirements of the Finnish Fertiliser Product Act, and Evira monitors ash properties on a regular basis.

Another significant reuse application has been construction, with the ash being used in the reconstruction of forest roads. The ash is used in the road base to improve the load-bearing capacity and frost resistance of the road. The ash is used instead of stone.

In addition to ash, the most important waste fractions were soil brought in on wood used for energy and drum reject generated during processing of recovered paper. As in previous years, the drum reject, consisting primarily of wood fibres and plastic, was sent to a local waste-management company to be used as raw material for recovered fuel. The soil was sifted and reused in the Himos area. The wood materials separated in the sifting process were forwarded to the Kaipola power plant for burning. The mills' waste oils were sent to regeneration plants for reuse.

Waste generated at the mills is carefully separated into different fractions, which are then reused as raw materials or for energy. Oils, metals, plastics, papers and cardboards are reused. Hazardous waste is sent to Fortum Oy in Riihimäki for processing by various methods. Wood waste, plastics, and paper and board waste unsuitable for recycling are used to produce recovered fuel or sent to facilities such as the Biovoima energy plant for burning.

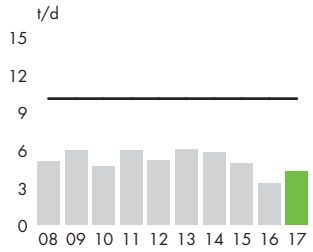
In compliance with UPM's environmental principles, the mills use water responsibly. The goal is to minimise the impact of the operations on local watercourses. The Joint Monitoring Programme for Central Päijänne has revealed that most of the area's nutrient load is caused by nonpoint source pollution from forestry and agriculture. According to the 2016 joint monitoring results, Kaipola's effluents accounted for 9.3% of the phosphorus load and 3.4% of the nitrogen load in the monitored area. Correspondingly, Jämsänkoski's effluents accounted for 7% of the phosphorus load and 2.1% of the nitrogen load in the monitored area. The water quality in the monitored area does not limit the occurence of any demanding species of fish.

The volume of process water used per tonne of paper produced remained at the previous year's level. The volume of process water used complied with the target level and the best available technology (BAT ref 2014) level.

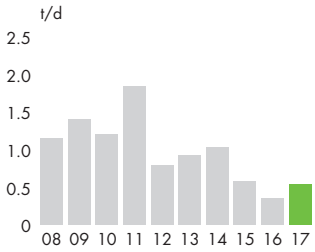
The effluent load of the Kaipola mill decreased from the previous year in terms of organic load, solids and nutrient load. The operations of the

JÄMSÄNKOSKI

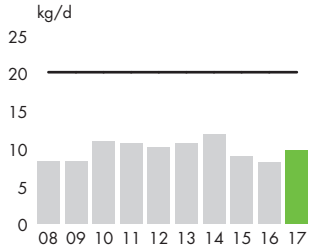
Chemical oxygen demand, COD



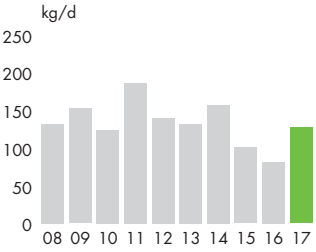
Total suspended solids, TSS



Phosphorus, P



Nitrogen, N



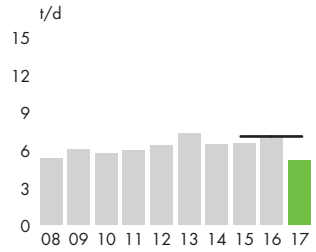
– Permit limit

treatment plant met the effluent limits set for processed waste water. The Kaipola mill's environmental permit includes monthly effluent discharge limits for chemical oxygen demand (COD), phosphorus and nitrogen. In addition, an annual discharge limit has been imposed for COD, and annual target values are in place for phosphorus and nitrogen.

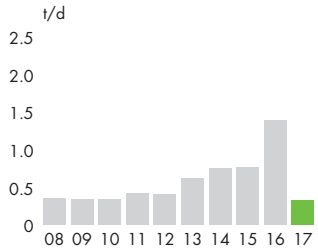
The effluent load of the Jämsänkoski mill complied with the limits allowed by the environmental permit. The environmental permit for the Jämsänkoski mill includes effluent discharge limits for COD and phosphorus. The effluent load at the Jämsänkoski mill increased slightly compared to the previous year in terms of COD, solids, phosphorus and nitrogen. An increase in annual production caused a greater organic load to be directed to the treatment plant for processing, which was then evident in the slightly higher load of the processed waste water.

KAIPOLA

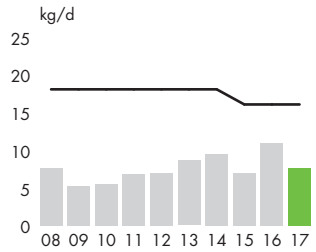
Chemical oxygen demand, COD



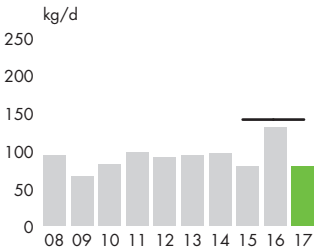
Total suspended solids, TSS



Phosphorus, P



Nitrogen, N



– Permit limit

Societal responsibility

Safety
To UPM, the health and safety of employees, visitors and all other people affected by our operations are of paramount importance. Our aim is to be the industry leader in safety. As a result of the company-wide "Step Change in Safety" initiative, safety results improved significantly.

We insist that our business partners and their employees on our sites comply with the rules and standards we have established for ourselves. UPM contractors who work in our production sites must have a basic understanding of UPM's safety procedures and, in addition, get a job specific safety training. Contractors must conduct UPM Safety Induction, which presents and demonstrates the basic Safety requirements.

In 2017, the lost-time accident frequency (LTAF, the number of lost-time work accidents per one million hours of work) was 3.3 within UPM as a whole. The corresponding figure at the Jämsä River Mills was 4.9. The work carried out has decreased the figure, in 2016 the LTAF in Jämsä River Mills was 5.6.

All UPM employees and contractors are encouraged to report all near misses and to make safety and environment observations. This information is available for sharing and learning in One Safety, UPM's global reporting tool, which was introduced in 2016. It covers environment, health and safety, product and process safety and security. At the Jämsä River Mills, 2,270 safety walk and discussions, as well as nearly 2,300 observations related to improving safety, were recorded using the One Safety tool. Of the entries, 132 were environmental observations and minor deviations that were dealt with in the daily operations of the mills, in accordance with the UPM operating model.

Due to serious accidents that have happened in other UPM units involving employees and subcontractors, the Jämsä River Mills have carried out several different projects to improve the safety of pedestrians around machinery and vehicles. An extensive project is underway to develop separation and containment solutions, as well as to clarify guidelines and rules for pedestrians.

Wellbeing
The Jämsä River Mills have a fitness centre and gymnasium that employees and their families may use for free. UPM also supports employees' exercise and cultural activities.

Individuals from the Jämsä River Mills participated in a variety of different training sessions related to wellbeing during 2017. Two custom wellbeing projects were initiated at the Jämsä River Mills, the first intended for individuals whose ability to work is at particular risk, and the second for those who do a lot of sitting at work. Our employees also participated in first aid training and safety training, Occupational Safety Card and Hot Work Card training, and chemical safety training.

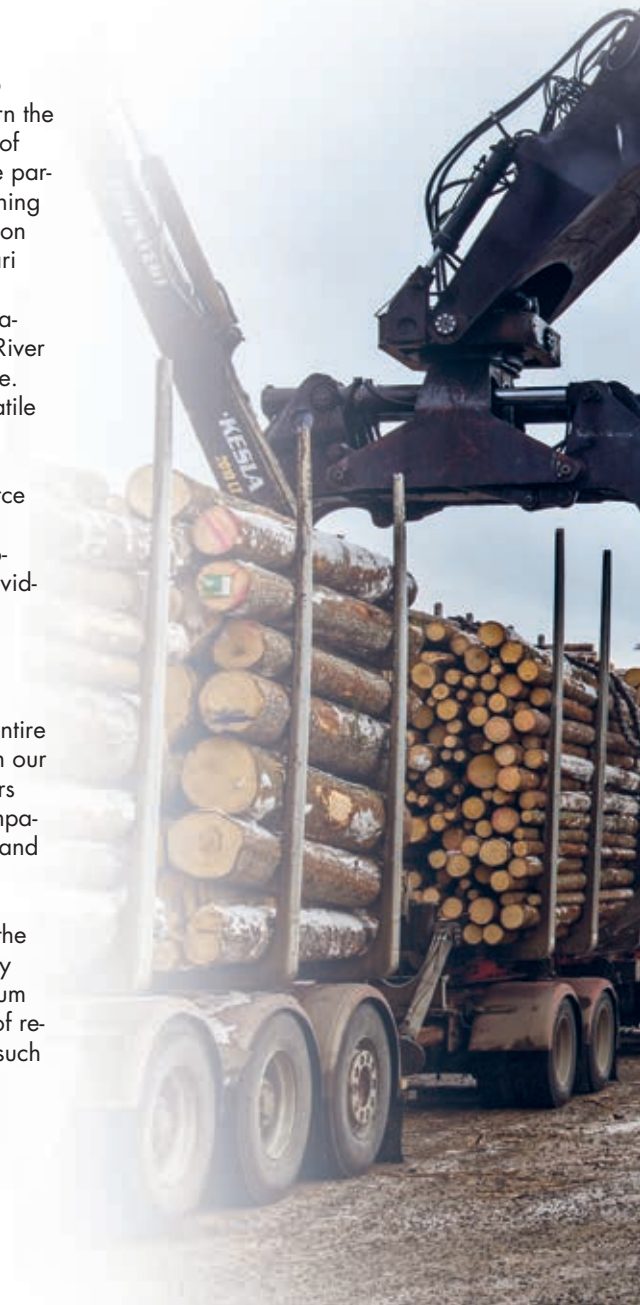
Encouraging learning
The UPM mills have apprenticeship programmes where employees learn the practical and theoretical demands of the work. The Jämsä River Mills are participating in an apprenticeship training programme, initiated in collaboration with the UPM Rauma and Tervasaari mills, which leads to the "Further Qualification for Power Plant Operators". Four people from the Jämsä River Mills participated in the programme. The goal is to obtain the most versatile professional know-how possible.

Last year, UPM launched the Bioforce Graduate trainee programme, with 14 trainees participating in the programme. The Jämsä River Mills provided one trainee position.

Code of Conduct
UPM is committed to responsible sourcing practices throughout the entire supply chain. We work closely with our suppliers to ensure that our suppliers understand and meet all of the company's requirements on sustainability and responsibility.

UPM requires its supplier to apply the UPM Supplier Code and Third Party Code that defines suppliers' minimum compliance requirements in terms of responsibility with regard to matters such as environmental impact, human rights, labour practices, health and safety, and product safety. The Supplier Code is complemented with more detailed rules, guidelines and supplier requirements, such as the list of Restricted Substances for paper and pulp businesses.

Suppliers' environmental and social performance is followed through regular data collection and analysis. Based on the risk assessments we carry out, we select the suppliers whose performance we want to study more closely. If any non-conformancies are found, the supplier is obligated to make corrective actions. We follow actively the results of these actions, and are ready to support our suppliers with our know-how in order to help them to enhance their performance.



UPM's Code of Conduct provides a foundation for responsible business conduct and continuous improvement. At the Jämsä River Mills, 97% of employees actively employed have completed training on the Code of Conduct.

Literacy broadens horizons

UPM's Biofore Share and Care programme reflects our commitment to building a sustainable, innovation-driven future by sharing our expertise and assets for causes we care about. One of the focus areas is Reading & learning.

With UPM's support, the Finnish Reading Centre has organised functional literacy workshops around Finland for vocational school students in technical fields, as part of the "Words Matter!" campaign. The objective of the campaign is to encourage vocational school students to read and improve their literacy skills. The Jämsä River Mills participated in the working life portion of the literacy workshop, organised at the Jämsä vocational school in May.

Promoting a culture of aiming higher

Based on internal surveys and discussions in management teams, UPM defined aspirational mindsets, encouraging a culture of aiming higher and supporting each other in doing so. UPM has a systematic process for goal setting and manager-employee dialogue on performance; 91% of Jämsä River Mills employees had individual goal setting or annual discussion in 2017. 91% of Jämsä River Mills employees underwent performance or annual reviews in 2017.

The UPM Employee Engagement Survey invites all employees across the company to evaluate different aspects of their working environment every year. In 2017 renewed survey aims to give better information on reaching of goals and development of UPM's people processes. At the Jämsä River Mills, 82% of employees responded to the survey. Of those who responded, 96% felt positively about the company's employee management.

Environmental parameters 2017

The figures related to production as well as raw material and energy consumption are published as aggregated figures on group level in the UPM Corporate Environmental Statement.

Production capacity	Paper	1,345,000 tonnes
Raw materials	Wood Recovered paper Pulp Fillers and coating pigments Process chemicals	See UPM Corporate Environmental Statement for more information.
Energy	Biomass-based and fossil fuels Purchased energy	Biomass-based fuels 74% Fossil fuels 26% See UPM Corporate Environmental Statement for more information.
Emissions to air	Particulates Sulphur dioxide, SO_2 Nitrogen oxides, NO_2 Carbon dioxide, CO_2, (fossil)	3.2 t 241 t 495 t 145,023 t
Water intake	Process and cooling water	21,663,000 m^3
Discharges to water	Cooling water Effluent volume Chemical oxygen demand, COD Biological oxygen demand, BOD_7 Phosphorus, P Nitrogen, N	6,137,000 m^3 15,495,000 m^3 3,419 t 128 t 6.3 t 75 t
Waste	Waste to landfill Reused waste – ash – drum reject from the deinking plant – soil – other Intermediate storage Hazardous waste – of which recyclable waste oil	0 t 44,136 t 1,337 t 2,787 t 2,431 t 0 t 132 t 73%
Size of mill area	Jämsänkoski and Kaipola	120 ha

Performance against targets in 2017

TARGET	ACHIEVEMENT	COMMENTS
No environmental deviations in categories 3–5	No	One category 3 deviation Rupture of a waste-water pipe in Kaipola, October 2017
Increasing the reliability of the Kaipola wastewater treatment plant	Yes	The operations of the treatment plant are stable, and the development project has been executed
Prevention of odour problems	No	The main portion of the pilot programme has been executed, but odour problems remain
Reuse of ash disposed of at the Pitkäniemi landfill as a replacement for stone in construction work	Yes	Stockpile fly ash has been reused at construction sites

Targets for 2018

TARGET	RESPONSIBILITIES/REQUIREMENTS BY DEPARTMENT
No environmental deviations in categories 3–5	Fast reaction to deviations
Prevention of odour problems	Investigation into new solutions, in collaboration with selected partners
Stakeholder engagement in the local community	Final decisions on environmental permits

EMAS
Verified environmental management
REG.NO. FI - 000058

Revalidation statement

As an accredited environmental verifier (FI-V-0001), Inspecta Sertifiointi Oy has examined the environmental management system and updated the UPM Jämsä River Mills Environmental and Societal Responsibility 2017 report, as well as the information concerning UPM Jämsä River Mills in the Updated UPM Corporate Environmental Statement 2017.

On the basis of this examination, the environmental verifier has herewith confirmed on 9 April 2018 that the environmental management system, the updated UPM Jämsä River Mills Environmental and Societal Responsibility report and the information concerning UPM Jämsä River Mills in the Updated UPM Corporate Environmental Statement are in compliance with the requirements of the EMAS Regulation (EC) No 1221/2009.

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