UPM BIOFORE
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UPM Kymi

ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2020

UPM Kymi

The UPM Kymi integrated mill site in the Kuusankoski quarter of Kouvola produces paper, pulp, and energy. The mill site, located on the shore of the Kymijoki River, is home to the UPM Kymi pulp mill and UPM Communication Papers Oy's Kymi paper mill. The key products of these mills are uncoated and coated fine paper as well as bleached birch and softwood pulp. The pulp mill is also a significant producer of bioenergy. In addition, pulp production generates crude tall oil and turpentine, which are used in the production of bioeconomy products. Fine paper production uses 100% chemical pulp. Birch, pine and spruce are used as raw materials.

In 2020, UPM Kymi's paper and pulp mills and global operations employed 744 people in total.

UPM has had a significant impact on the birth and development of the local community in Kouvola for almost 150 years. We still have a significant impact on the area as a taxpayer as well as an employer.

The heat energy and the majority of the electricity needed by the mills is produced by the energy production unit of the pulp mill and the Kymin Voima bioenergy plant operating in the site area.

Schaefer Kalk Finland Oy's PCC plant is also located on the Kymi integrated mill site. Kymin Voima Oy's biofuel power plant and the PCC plant are not included in the scope of this report.

Personnel • Kymi integrate	744
Paper mill • Production capacity	705,000 t
Products	Coated and uncoated fine paper UPM Finesse, UPM Fine, UPM PrePersonal, UPM Poste, UPM Office, New Future, Kym Ultra, KymLux, UPM Jetlabel, UPM LabelCoat prime, UPM Vellum
Pulp mill • Production capacity	870,000 t
Products	Birch pulp UPM Betula and softwood pulp UPM Conifer
Bioenergy	Heat energy and electricity
Residues	Tall oil and turpentine
Certificates	EMAS – EU Eco-Management and Audit Scheme ISO 14001 – Environmental Management System ISO 9001 – Quality Management System ISO 50001 – Energy Management System ISO 45001 – Occupational Health and Safety Management System ISO 22000 – Food Safety Management System PEFC™ – 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's pulps have been approved for use in paper products that bear the EU Ecolabel and Nordic Ecolabel.

UPM Kymi Environmental and Societal Responsibility 2020 is a supplement to the Corporate Environmental and Societal Responsibility Statement of UPM's pulp and paper mills (available at www.upm.com) and provides mill-specific environmental and societal performance data and trends for the year 2020. The annually updated mill supplements and the UPM Corporate Environmental and Societal Responsibility Statement together form the joint EMAS Statement of UPM Corporation. The next Updated UPM Corporate Environmental Statement and also this supplement will be published in 2022.

UPM delivers renewable and responsible solutions and innovates for a future beyond fossils across six business areas: UPM Biorefining, UPM Energy, UPM Raflatac, UPM Specialty Papers, UPM Communication Papers and UPM Plywood. As the industry leader in responsibility we are committed to the UN Business Ambition for 1.5°C and the science-based targets to mitigate climate change. We employ 18,000 people worldwide and our annual sales are approximately EUR 8.6 billion. Our shares are listed on Nasdaq Helsinki Ltd. UPM Biofore – Beyond fossils. www.upm.com

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EU Ecolabel
www.ecolabel.eu
EU Ecolabel : FI/011/001

Review of the year 2020

In 2020, the pulp mill enjoyed a good market year and production almost reached the level of the previous year despite the global challenges presented by the COVID pandemic. However, the market situation for the paper mill was weaker than the year before. The volume of pulp sold to third parties increased slightly compared to the previous year.

Obligations related to environmental protection were covered systematically in compliance with the environmental permit.

We were able to reduce our environmental load in many respects. For example, our recovery boiler NO_x emissions were low thanks to the changes to the recovery boiler combustion air distribution made during the spring 2019 shutdown. The integrated mill site's environmental objectives included maintaining compliance with the Clean Run programme launched in 2011, reducing abnormal emissions, increasing environmental awareness among employees, decreasing water consumption and wastewater discharges and air emissions, increasing the reuse of process waste and reducing the amount of solid waste sent to landfill sites as well as active participation in studies seeking to reuse green liquor dregs.

The Clean Run programme was part of the Kymi mill site's normal operations in 2020. All abnormal emissions were recorded with the One Safety tool and their underlying causes were studied.

An environmental review was arranged once a week during the pulp and paper mill's morning meetings to review the environmental issues and events of the previous week in more detail.

Resulting from a wastewater purification plant malfunction, the amount of solids discharged into the river exceeded the monthly permit limit in January. The lime kiln particle emissions exceeded the annual permit limit. The plant's emissions for all other areas were under the permit limits.

Sixteen pieces of stakeholder feedback were received in 2020. Fifteen of them concerned odour emissions that mainly occurred during malfunctions as well as shutdowns and activations. Additionally, one piece of feedback concerned foam visible in the river.

The autumn of 2020 saw the release of UPM's new accountability and impact website, which highlights in a novel way the accountability matters present in the UPM Kymi 2019 EMAS report as well as UPM's accountability goals for 2030. UPM Kymi has been the pilot project in the design of the website. The English and Finnish websites can be found at www.upmimpacts.com and www.upmvaikuttaa.fi. The website will be updated with the data from 2020.

The paper mill's Safety and Environmental Manager Anna Laksio (left) and the pulp mill's Environmental Manager Päivi Hyvärinen

Jyri Kylmälä
General Manager
Kymi pulp mill

Matti Laaksonen
General Manager
Kymi paper mill

Päivi Hyvärinen
Environmental Manager
Kymi pulp mill

Anna Laksio
Safety and Environmental Manager
Kymi paper mill

UPM Kymi

Responsibility figures 2020

Taxes

Integrate's tax impact approx.

EUR 16 million

Real estate tax EUR 0.7 million
Estimate of tax on salaries EUR 6.0 million
Estimate of corporate income tax EUR 9.4 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

Consumption impact*

Integrate's consumption impact in region approx.

EUR 39 million

in Finland approx. EUR 71 million

* Direct and indirect employees' private consumption of commodities through net income

Community

UPM Kymi, UPM Energy, and UPM Kalso supported COVID pandemic work in Kouvola by donating a total of

54,000

face masks for care work.

Employment

The integrate employed

744 people

Indirect employment effect in region approx. 730 persons.

Safety

The number of accidents resulting in sick leave of UPM personnel at the pulp and paper mill

0

Decrease over the past 10 years. The number of accidents resulting in sick leave for UPM personnel at the Kymi mill has decreased by 100%.

Wellbeing

According to the annual UPM Employee Engagement Survey The Kymi pulp mill's manager performance results increased by

7%

and enablement by 1%. Enablement is one of the main indices.

Water

COD emissions to water have decreased through 2011–2020

48%

The figure applies to production at the Kymi pulp mill.

Water

AOX emissions to water decreased through 2011–2020

55%

The figure applies to production at the Kymi pulp mill.

Energy

In 2020, percentage of energy from renewable sources over

89%

Pulp production used black liquor as main fuel.

Supply chain

99%

of raw material spend covered by UPM Supplier and Third Party Code (wood not included).

Air

Airborne emissions reduced through 2011–2020, sulphur dioxide, SO_2

74%

The figure applies to production at the Kymi pulp mill.

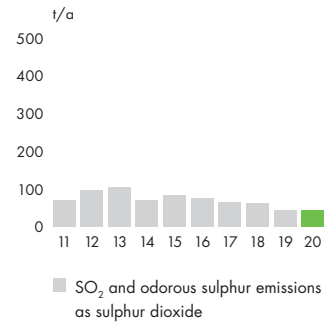
Certified fibre

86%

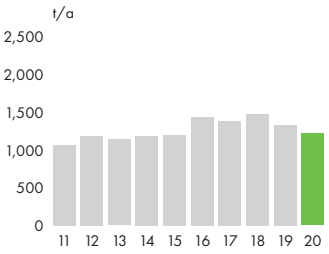
of fibre used in paper production was FSC and/or PEFC certified. UPM's target is to use only certified fibre by 2030.

Air and noise

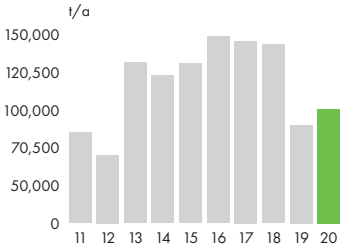
Gaseous sulphur emissions SO_2*



Nitrogen oxides, NO_2*

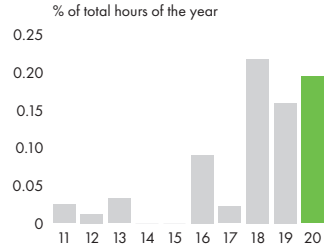


Carbon dioxide, fossil*
CO_2 consumed by the PCC plants reduced through 2010–2012 and 2019–2020



* Includes Kymin Voima Oy's emissions with regard to the energy consumed by Kymi.

Annual percentage of hourly average TRS content above 5 µg/m³



Aerial emissions complied with the permit limits, with the exception of lime kiln particle emissions.

The lime kiln particle emissions exceeded the annual permit limit. The high level of particle emissions was caused by structural changes made to the feed end of the lime kiln in the autumn of 2017 to increase efficiency. These changes resulted in a significant increase in the particle emissions from the lime kiln. During the maintenance shutdown scheduled for May 2019, structural changes were made to the feed end of the lime kiln to resolve the dust issue. The changes made to the feed end of the lime kiln reduced dust emissions but not to the extent expected. Further examinations have revealed that some of the lime kiln electric filter fields do not work optimally. The dust emission rate has remained high even after the measures described above. Electrostatic precipitator performance is insufficient with current lime kiln production amounts. The increase in pulp production has increased the lime kiln production and flue gas rates compared to the original proportioning of the electrostatic precipitator.

During the maintenance shutdown scheduled for 2021, a fourth field will be installed in the precipitator and the rectifiers of all four fields will be swapped for more efficient three-phase rectifiers. The automation and control systems of the electrostatic precipitators will be modernised in conjunction as well. It is estimated that these investments will reduce post-precipitator dust emissions by over 50% compared to the current level and increase precipitator usability.

The recovery boiler's NO_X-specific emissions continued to decrease due to the changes to the recovery boiler combustion air distribution made during the spring 2019 shutdown. Gaseous sulphur emissions were very low.

It was also recorded that 99.7% of weak malodorous gases and 99.9% of strong malodorous gases were recovered and burnt.

The increase in production volume has placed more strain on the recovery of malodorous gases and led to the temporary occurrence of unpleasant odours during process disturbances. However, TRS emissions at the Kouvola City Environmental Services measuring station in central Kuusankoski remained low. The average hourly TRS content only exceeded 5 µg/m³ for 0.194% of the total number of hours within 2020, equating to a total of approximately 17 hours.

2020 carbon dioxide emissions slightly increased year-on-year. Lesser production in the paper mill led to a decrease in PCC production, leading in turn to a decrease in the capacity to consume lime kiln carbon dioxide emissions. As of 2019, CO_2 consumed by the PCC plant is now deducted from our CO_2 emission figures in accordance with the EU Emission Trading Scheme.

The cylinder-shaped lime kiln in the middle of the picture is an important component of the mill's chemical circulation. The lime kiln's electrostatic precipitator capacity will be increased during the 2021 maintenance shutdown to reduce particle emissions.

Waste

The total amount of waste produced in 2020 was 25,200 tonnes, of which 9,939 tonnes was taken to a landfill (Lamminmäki) for final disposal as dry matter. In 2020, only green liquor dregs were disposed of at the Lamminmäki landfill. All green liquor dregs produced at the plant had to be dumped at the landfill due to a lack of reuse applications.

The recovery process results in green liquor dregs for which a reuse application has not been found, despite many research projects.

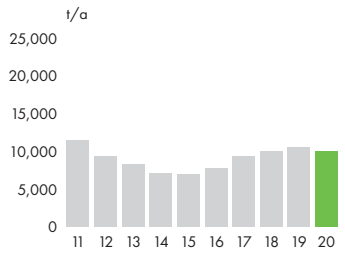
A total of around 20,400 tonnes of wastewater sludge was combusted in the Kymin Voima Oy boiler in 2020.

Around 6,100 tonnes of ash were reused in 2020. As before, ash created during bioenergy production was delivered for granulation, after which it was applied to forests owned by UPM as fertiliser. The idea is to recycle the nutrients from the wood that is brought to the mill back into the forest. Other re-use applications in 2020 included Lamminmäki landfill protective structures, absorption of green liquor dregs in Lamminmäki landfill structures, and Encore Ympäristöpalvelut Oy field structures. At the end of 2020, there was no ash in temporary storage.

Approximately 3,100 tonnes of bark and wood waste was delivered to be reused as culture medium raw material in 2020.

Additionally, a total of 185 tonnes of sedimentation basin sludge was delivered for reuse in an experimental study on improving growth conditions in 2020. No waste was taken from the paper mill to a landfill in 2020.

Solid waste taken to a landfill dry*



* Includes Kymin Voima Oy's ash corresponding to the energy used by Kymi.

Ash created during bioenergy production was delivered for granulation, after which it was applied to forests owned by UPM.

Water

Resulting from a wastewater treatment plant malfunction, the amount of solids discharged into the river exceeded the monthly permit limit in January 2020. Caused by a malfunction, the chain of events began with an above-average COD load reaching the wastewater treatment plant and sludge treatment working poorly. The malfunction was, however, quickly remedied, and other water discharges into the river remained below environmental permit limits. For the rest of the year, the wastewater treatment plant functioned well. To avoid such malfunctions in the future, sludge treatment operations have been optimised further and placed under increased monitoring, and supervision of both the load and the performance of the wastewater treatment plant have been increased. Due to the malfunction, the amount of solids entering the river was higher year-on-year; COD and AOX emissions, however, remained at the same level.

The reduction levels indicating the efficiency of the wastewater treatment plant were 99% for biological oxygen demand (BOD) and 79% for chemical oxygen demand (COD). The solids reduction rate stood at 91%.

Water samples are taken from the Kymijoki River regularly, in accordance with the applicable joint monitoring programme. The samples are acquired and analysed by Kymijoen Vesi ja Ympäristö ry.

In 2020, the Kymi mill site used water a total of approximately 92 million m^3.

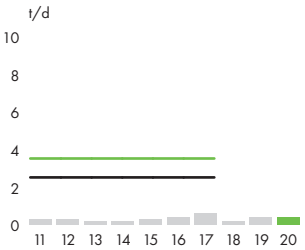
The paper mill's amount of wastewater and solids loss per tonne of product saw an increase year-on-year, caused by the decreased amount of production and repeated shutdowns and startups of the paper machines.

Resulting from the wastewater treatment plant malfunction in January, the pulp mill's wastewater and solids loss specific emissions increased year-on-year.

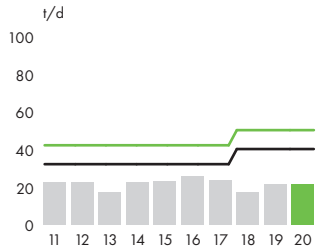
In the autumn of 2020, the wastewater treatment plant began a test drive of hydrogen-rich biogas plant reject water. Its goal is to investigate the replacement of industrially manufactured hydrogen and phosphorus with recycled nutrients as the wastewater treatment plant's source of nutrients. UPM's aim is that all nutrients used at the biological wastewater treatment plant will be recycled by 2030.

The water consumption and water emissions of the pulp and paper mill represented the best usable technology possible in relation to the emission levels set by the BAT conclusions on the paper and pulp industry.

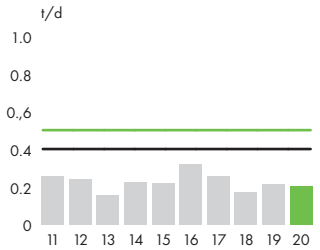
Biological oxygen demand, BOD



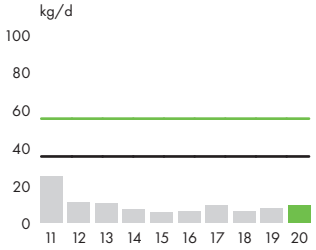
Chemical oxygen demand, COD_{Cr}



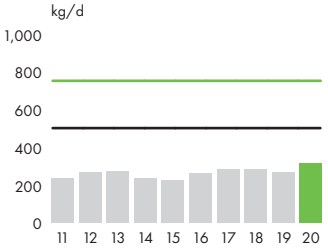
Organic chlorine compounds, AOX



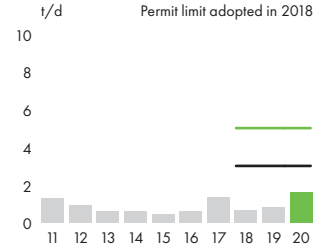
Phosphorus, P



Nitrogen, N



Solids



— Permit limit, monthly mean value
— Permit limit, annual mean value

Management of crises and exceptional situations

The following types of events are included within the management of crises and exceptional situations and communications at the Kymi mill property and surrounding area:

- Serious accidents and near-miss situations (major fires, explosions, chemical accidents etc.)
- Environmental damages
- Serious work injuries (including accidents on the way to or from work) and traffic accidents on the mill site
- Serious interruptions in production
- Other exceptional situations such as sabotage, demonstrations, work health and safety risks, pandemics, risks that could harm UPM's reputation, cyber threats and network destruction, and threatening situations not within Kymi, e.g., at other industrial plants etc.

Operational management includes the controlled shutdown of production and measures required to gain control of the exceptional situation, among other things. Event investigation and the flow of information takes place in accordance with the organisation's chain of command and agreed roles. Our crisis communication group consists of members of the mill's management team or is formed separately on a case-by-case basis. Exceptional situations concerning Kymin Voima Oy and projects being run at the Kymi mill site will be dealt with in accordance with the Kymi guidelines and organisational actions.

The integrated mill's COVID measures have included instructing personnel to use face masks in situations where maintaining social distance is not possible. Image: Ossi Nikki

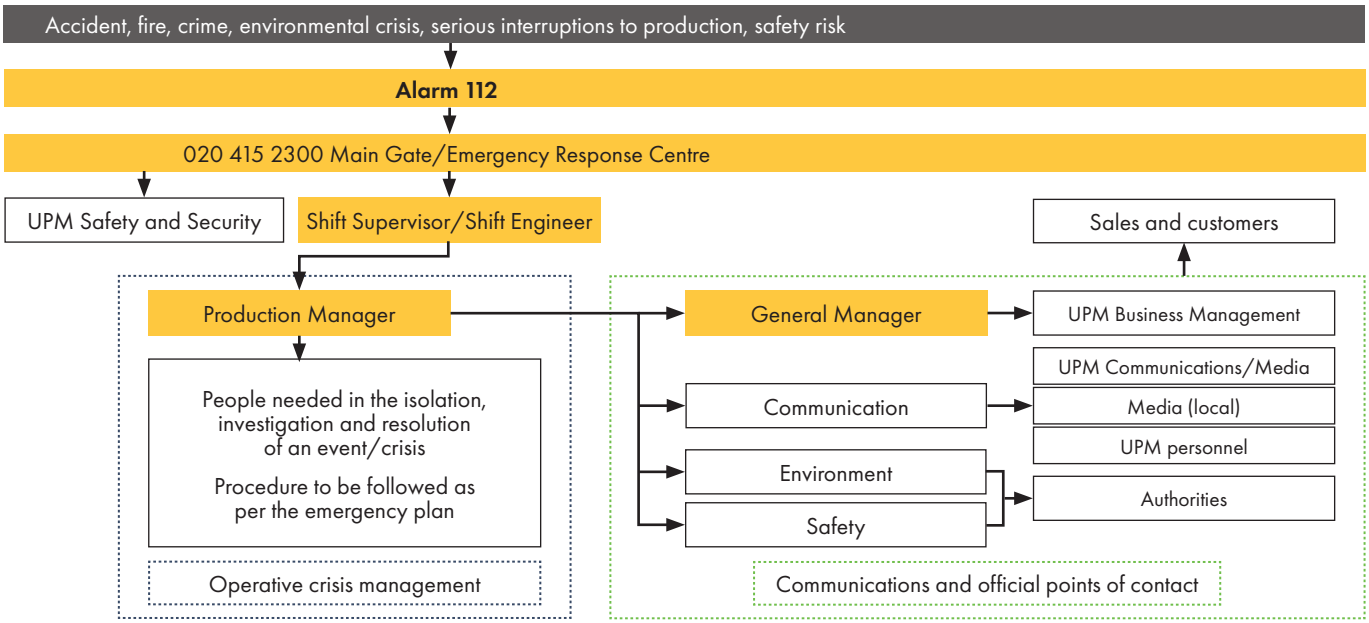
External companies operating on the mill site will follow their own guidelines. However, all emergencies will be reported as per the Kymi mill emergency policy.

In February, there was a fire at the Kymi paper mill. Thanks to first-aid extinguishing by operational staff as well as the work of the mill fire service and the Kymenlaakso Rescue Department, the fire was put out.

In 2020, the COVID pandemic caused an exceptional situation for mill operations. Separate state of exception guidelines were made for the paper mill and the pulp mill due to the pandemic, covering both mill personnel and contractors. A mill COVID response team held regular meetings.

The new UPM Kymi mill site emergency policy entered into force on 1 January, 2021. Emergency calls must always be made to the emergency number 112 or via the 112 Suomi application. After calling, the event must be reported also to the Kymi emergency response centre.

The crises management chain of command – communications and flow of information at UPM Kymi



Societal responsibility

Safety
Occupational and environmental safety are fully embedded in our daily activities and is not considered less or secondary than any other interest. Our permanent target is to have zero accidents. We strive to eliminate accidents under our control through continuous improvement and effective risk management.

Work safety at the Kymi paper mill and pulp mill is at a good level: no UPM personnel lost time accidents occurred at the mills in 2020.

Personnel were actively encouraged to report any safety issues and conduct frequent safety tours as well as to use the One Safety tool. Last autumn were three Kymi paper mill employees awarded the Best Safety Ambassador certificate of honour, issued by UPM Communication Papers. The certificate is a sign of exceptionally meritorious safety-related work and initiative that enhances safety for colleagues and the Kymi paper mill as a whole.

Well-being and health at work
Employees' well-being is supported with the ePass, whose balance can be spent on different sports and culture services. In 2020, this benefit was utilised by 81% of employees at the pulp mill and 79% at the paper mill.

The Kymi integrated mill saw an occupational well-being project aiming to individually develop the ability to work of each person participating in the project.

Work health-care services are available to Kymi employees. Employees' ability to work was also taken care of through versatile health checks. The health checks include both the age group examinations and statutory examinations for people performing tasks that may cause exposure.

The annual employee engagement survey was carried out in September. Based on the results of the pulp mill, enablement – the other main index of the survey – was slightly improved. Another markedly positive development was the positive advancement of managerial work, as direct superiors are central to well-being. At the paper mill, too, employee management was in the top three most positive dimensions, beside safety and good business practices.

We encourage our employees in learning and developing their skills. In 2020, the paper mill had a staff training hour total of 2,510, and the pulp mill 1,481. 100% of personnel at both the paper mill and the pulp mill have completed training on the UPM Code of Conduct.

Stakeholder engagement
Starting from February–March, the pandemic situation began to impact stakeholder engagement, and mill visits and study trips, among other things, could no longer be organised. However, thousands of people managed to be involved in student and youth activities organised by UPM Kymi in Kouvola, Mikkeli, Lahti, and Lappeenranta in toward the beginning of the year. There are various forms of collaboration with educational institutions, with recruitment and networking events being the most common. In January, personnel from Kymi participated in a large forest owner event in Kuusankoski.

Sixth graders from Kouvola got to have their forest trip days in September, with special COVID precautions and safety measures. During the excursions, called "Commercial Forests – Development and Sustainable Use", pupils learned about the commercial and recreational use and growth of forests, wildlife management, and wood-based products. In addition, every pupil got a chance to plant a seedling that will become a part of a forest. The event was organised by UPM Forest in cooperation with the Finnish Forest Association and the schools. In November, Kymi staff members participated in the virtual KouAhead event aimed at all ninth graders from Kouvola, where the youths were informed about possibilities for continued studies, vocational education, and employment.

UPM Kymi, UPM Energy, and UPM Kalso supported COVID pandemic work in Kouvola by donating a total of 54,000 face masks for care work. The donation recipients were the Kymsote home-care section and the Valkeala-based Service Centre Iltatähti. The donation was a part of the Biofore Share and Care programme.

In August–September, UPM supported the Children and Youth Foundation-coordinated Finnish Read Hour-campaign, and virtual reading sessions were organised at Kouvola lower secondary schools. During the sessions, volunteers read excerpts from their favourite books and shared their experiences about the meaning of the works.

Flow of information to members of the Finnish pulp mill pension trust was improved with the launch of the new UPM Pulp Mill Pension Trust website at www.upmsellutehtaidenelakesaatio.fi.

Well-functioning stakeholder dialogue is a key component for success for UPM. We are committed to developing the vitality of the communities close to our operations through active co-operation and open dialogue with various stakeholders as well as, for example, through sponsorships and employee volunteering.

UPM is a significant operator in Kouvola. In 2020, the Kymi mills and other UPM operations in the area employed near-

In January, reflectors were handed out to staff members at the Kymi site gates. The campaign sought to recognise safe working and to remind personnel of the importance of ongoing security efforts.

In June, the first face mask handoff took place at the Kymsote home-care support service site in Kouvola. Attending were, from the left in the image, Kymsote Home-Care Service Supervisor Kaarina Paju, UPM Energy President of Stakeholder Relations Stefan Sundman, Kymi Pulp Mill General Manager Jyri Kylmälä, and Paper Mill General Manager Matti Laaksonen, as well as Regional Chief of Home-Care Services Kaisa Kelkka. The second face mask handoff to Kymsote was in September.

Sixth graders from the Jaala school planting a seedling. Image: Ossi Nikki

ly 900 people in total. UPM was the fourth-largest employer in the area.

With global operations personnel included, the total number of company personnel at the Kymi integrated mill site was 744. Over the summer, approximately 120 people were employed as holiday stand-ins.

Tax impact

Tax revenue generated by UPM's business operations is an essential part of our societal impact. UPM pays corporate income taxes in the countries where added value is created, and profit is generated. Based on UPM's corporate and operational structure, UPM reports and pays its corporate income taxes mainly in countries where production activity takes place and where innovations are developed. In addition to the taxes on income, UPM's various production inputs and outputs are also subject to taxation.

The mills' operations also benefit the local community in many ways. Municipal share of corporate income taxes and the real estate taxes paid by UPM support the local economy. In addition, the taxes and social security contributions that UPM employees pay on their wages have also a significant local impact. Furthermore, the purchasing power of UPM employees and subcontractors maintains and enhances the vitality of the community.

The Kymi integrated mill site's tax impact in Kouvola amounted to approximately EUR 16 million in 2020. The tax impact consist of the real estate tax (EUR 0.7 million), the estimate of tax on salaries (EUR 6.0 million), and the estimated corporate income tax (EUR 9.4 million). In total, municipalities receive approximately 30% of corporate income taxes. This amount is split between municipalities according to the ratios calculated based on business and forest operations in the municipality.

Consumption impact

The local impact on consumption created by the integrated mill site amounted to approximately EUR 39 million in 2020. For Finland as a whole, the impact was approximately EUR 71 million). These figures reflect direct and indirect emplyees' private consumption of commodities through net income.

Responsible sourcing

UPM is committed to responsible sourcing practices throughout the entire supply chain. UPM requires its suppliers to comply with the UPM Supplier Code and Third Party Code. UPM's target is to have 100% of all spend covered by UPM Supplier and Third Party Code by 2030 (Qualified spend). At the Kymi site, this figure was 99% in 2020.

Environmental parameters

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 and Societal Responsibility Statement.

		2018	2019	**2020**
Production capacity	Coated and uncoated fine paper	730,000 t	710,000 t	705,000 t
	Pulp	870,000 t	870,000 t	870,000 t
Raw materials	Timber Purchased pulp Chemicals	See UPM Corporate Environmental and Societal Responsibility Statement for more information		
Energy	Biomass-based fuels	89%	89%	89%
	Fossil fuels	11%	11%	11%
	Purchased energy[1]			
Emissions to air	Sulphur, SO_2	62.3 t (SO_2 and malodorous sulphur emissions as sulphur dioxide)	44.5 t (SO_2 and malodorous sulphur emissions as sulphur dioxide)	43.5 t (SO_2 and malodorous sulphur emissions as sulphur dioxide)
	Nitrogen oxides	1,474 t	1,327 t	1,215 t
	Carbon dioxide (fossil)	141,688 t	77,916 t	90,566 t
	Particulates	380 t	243 t	215 t
Water intake	Process and cooling water	90,015,476 m^3	92,284,161 m^3	91,767,230 m^3
Discharges to water	Cooling water	53,046,303 m^3	55,263,794 m^3	53,547,537 m^3
	Effluent	36,982,038 m^3	37,020,367 m^3	38,219,414 m^3
	COD_{Cr}	6,204 t	7,674 t	7,782 t
	BOD_7	85.4 t	146 t	148 t
	AOX	63.4 t	78.7 t	75.4 t
	Phosphorus	2.27 t	2.74 t	3.43 t
	Nitrogen	104 t	97.4 t	116 t
Waste[2]	Landfill			
	– green liquor dregs	9,908 t	10,533 t	9,938 t
	– lime waste	–	–	–
	– mixed waste	9 t	11 t	–
	– process waste	98 t	–	–
	– building waste	7 t	6 t	1 t
	Reused waste			
	– ash	8,960 t	1,938 t	6,132 t
	– green liquor dregs	177 t	–	–
	– sludge	–	439 t	185 t
	– lime, lime sludge	370 t	251 t	123 t
	– bark and wood waste	2,803 t	2,718 t	3,099 t
	– cores and wrapping	3,533 t	3,361 t	3,188 t
	– waste paper and cardboard	145 t	224 t	67 t
	– metal	596 t	607 t	263 t
	– combustible waste	491 t	495 t	418 t
	– concrete and asphalt waste	307 t	912 t	1,356 t
	– biowaste	19 t	21 t	18 t
	– other waste	1,169 t	782 t	275 t
	Temporarily stored waste intended for reuse			
	– ash	0 t	1,948 t	0 t
	Hazardous waste	91 t	178 t	161 t
Land use	Total amount of land use	290 ha	290 ha	255 ha
	Area impermeable to water			110 ha
	Area directed towards nature conservation			145 ha

The figures include Kymin Voima Oy's waste and emissions with regard to the energy consumed by the Kymi site.

1) See UPM Corporate Environmental and Societal Responsibility Statement for more information (e.g. energy indicators)

2) Dry weight

The pulp mill's performance against targets in 2020

OBJECTIVES AND INDICATORS	ACHIEVED	COMMENTS
Minimising abnormal emissions – Categories 3–5, 0 cases	No	Permit limit exceeded twice: lime kiln particle emissions and solids entering the river.
Solid waste to landfill < 12.5 kg of dry matter/tonne of pulp	Yes	Actual figure below target. The amount of green liquor dregs is considerable.
Reducing water consumption at the pulp mill – Goal: < 39 m^3/tonne of pulp	Yes	Water consumption reduced by improvements in birch line washing.
COD emissions – Goal: < 9.0 kg/tonne of pulp	Yes	Improvements and optimisation in birch line washing.
AOX emissions – Goal: < 0.10 kg/tonne of pulp	Yes	Improvements and optimisation in birch line washing.
Solids to river – Goal: < 0.10 kg/tonne of pulpa	No	Monthly permit limit exceeded.
Pulp mill CO_2 emissions – Goal: < 50 kg of CO_2/tonne of pulp	No	Lime kiln still mainly fuelled by natural gas.
SO_2+TRS emissions – Goal: < 0.1 kg of sulphur/tonne of pulp	Yes	Actual figure very low.
NO_x emissions – Goal: < 1.55 kg/tonne of pulp	Yes	The recovery boiler's NO_x emissions became low after the adjustments made to the combustion air distribution.
Lime kiln particles – Goal: < 0.05 kg/tonne of pulp	No	Annual permit limit exceeded.

The paper mill's performance against targets in 2020

OBJECTIVES AND INDICATORS	ACHIEVED	COMMENTS
No abnormal emissions – Classes 3–5	Yes	No abnormal emissions.
Waste to landfill 0 t	Yes	No waste to landfill.
Reducing water consumption at the paper mill < 10 m^3/tonne of paper	No	Not achieved.
Solids loss at the paper mill < 10 kg/tonne of paper	No	Not achieved.
Number of environmental observations: 60 pcs	Yes	The number of environmental observations was 62.

The pulp mill's targets for 2021

OBJECTIVES AND INDICATORS	SCHEDULE	RESPONSIBILITIES BY DEPARTMENT
No permit limits exceeded – Classes 3–5	2021	Reducing of lime kiln particle emissions. Reducing odour complaints. Stable, good functioning of the wastewater treatment plant.
Solid waste to landfill < 12.5 kg of dry matter/tonne of pulp	2021	Actively participating in research seeking re-use applications for green liquor dregs. Finding a reuse application for green liquor dregs.
Water consumption < 38 m^3/tonne of pulp	2021	Optimising fibre line washing at the maximum production level.
COD emissions < 9 kg/tonne of pulp	2021	Optimising fibre line washing at the maximum production level.
AOX emissions < 0.10 kg/tonne of pulp	2021	Optimising fibre line washing and chlorine dioxide doses at the maximum production level.
Solids to river < 1.0 t/d	2021	Maintaining steady operation and proceeding with scheduled maintenance work at the wastewater treatment plant.
CO_2 emissions < 50 kg CO_2/tonne of pulp	2021	Optimising the operation of the lime kiln. Minimising unplanned shutdowns. Attaining a good paper mill operation rate.
SO_2+TRS emissions < 0.1 kg of sulphur/tonne of pulp	2021	Minimising unplanned shutdowns.
NO_x emissions < 1.45 kg/tonne of pulp	2021	Minimising unplanned shutdowns.
Lime kiln particles < 0.05 kg/tonne of pulp	2021	A fourth field will be installed in the electrostatic precipitator during the 2021 shutdown.

Construction of the new Kymi pulp mill oxygen plant was started in the autumn of 2020. Image: Petteri Metiäinen

The paper mill's objectives for 2021

OBJECTIVES AND INDICATORS	SCHEDULE	RESPONSIBILITIES BY DEPARTMENT
No abnormal emissions – Classes 3–5	2021	Continuously improving environmental awareness.
Reducing water consumption at the paper mill < 10 m^3/tonne of paper	2021	Improving paper machine runnability.
Solids loss at the paper mill < 10 kg/tonne of paper	2021	Improving paper machine runnability.
Number of environmental observations 60 observations/year	2021	Developing environmental communications, understanding environmental observations, improved recognisation and reporting.

A new folio sheeter was started at the paper mill in the autumn of 2020. Image: Pekka Mertakorpi

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 UPM Kymi Environmental and Societal Responsibility 2020 statement as well as the information concerning UPM Kymi in the Updated UPM Corporate Environmental and Societal Responsibility Statement 2020.

On the basis of this examination, the environmental verifier has herewith confirmed on 2021-04-01 that the environmental management system, the UPM Kymi Environmental and Societal Responsibility 2020 statement and the information concerning UPM Kymi in the Updated UPM Corporate Environmental and Societal Responsibility Statement 2020 are in compliance with the requirements of the EMAS Regulation (EC) No 1221/2009.

We reduce the world's reliance on fossil-based materials by developing renewable and responsible products and solutions in all our businesses. **UPM Biofore – Beyond fossils.**

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