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UPM Pietarsaari

ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2020

UPM Pietarsaari

The UPM Pietarsaari integrated mill unit consists of the Pietarsaari pulp mill, the Alholma sawmill and UPM Metsä's northern region office. The mills are located on UPM's industrial estate in Alholma, together with BillerudKorsnäs Finland, Walki and Alholmens Kraft.

The mill site is a diverse concentration of the bioforestry industry. At the site, wood from nearby areas is processed into sawn timber, pulp, paper, processed paper products and energy. UPM Metsä procures wood for the pulp mill and sawmill and takes care of their measurement at the mills. The logs are sawn at the Alholma sawmill and pulp is made from the pulpwood, sawdust and wood chips. A part of the pulp is delivered to the BillerudKorsnäs paper mill for kraft paper manufacturing. The Walki factory processes some of the kraft paper to make different packaging materials. Bark and other wood residue is used by the Alholmens Kraft power plant to generate electricity, steam and district heating.

This EMAS report covers environmental matter pertaining to UPM's Pietarsaari pulp mill and the Alholma sawmill. Social responsibility is addressed with regard to the entire integrated unit.

	Pulp mill		Alholma sawmill
Production capacity	800,000 t		280,000 m³
Personnel	304		64
Products	**Softwood pulps:**	UPM Conifer UPM Conifer Thin	pine and spruce sawn timber, woodchips, sawdust and bark
	Birch pulps:	UPM Betula UPM Betula TCF	
Side products and residues	Tall oil, turpentine, lime sludge and green liquor dregs		
Bioenergy	Heat energy and electricity		
Certificates	EMAS – EU Eco-Management and Audit Scheme ISO 14001 – Environmental Management System ISO 50001 Energy Management System ISO 9001 – Quality Management System ISO 22000 – Food Safety Management System ISO 45001 – Occupational Health and Safety Management 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 www.upm.com/responsibility		
Environmental labels	EU Ecolabel		

UPM Pietarsaari 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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Alholma sawmill

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Review of the year 2020

Pulp mill
2020 was a challenging year for the pulp mill in terms of production. The coronavirus and the annual maintenance shutdown brought their own challenges to the situation. Updated production devices were introduced in the annual maintenance shutdown that enable production to be maintained with smaller environmental impacts. The pulp mill's key long-term environmental objective is to increase production without increasing the quantitative environmental load.

Obligations related to environmental protection have been taken care of systematically and in accordance with the environmental permit. In 2020, the mill site's waste water discharges remained at a level similar to that of previous years. The optimisation of the waste water purification plant's operation was continued. The stable operation of the purification plant maintained the good purification level of waste water. Calculated as specific emissions, discharges into the sea were clearly in line with the BAT level (BAT ref. 2014). Emissions into the air, with regard to nitrogen oxides and particle emissions, were at a lower kevel than in previous years. Calculated as specific emissions, emissions into the air were clearly at the BAT level specified in 2014.

75 environmental observations related to preventative environmental safety were recorded at the pulp mill. There was one case where the permit terms were exceeded, relating to the usage rate of the processing equipment of odorous gases, in conjunction with the ramp-up following the annual maintenance shutdown. Efforts to utilise solid waste were continued. UPM has set a target for no solid waste to be taken to landfill or burned without energy recovery after 2030. The work to promote a circular economy continues, and the aim is to reintroduce sidestreams from operations into the material cycle.

During the year, there were two instances where stakeholders got in touch with environmental issues, related to disturbance caused by noise and odour. The amount was less than in previous years.

Alholma sawmill
The year went well for the Alholma sawmill, both production-wise and from an environmental perspective. Production efficiency was always good when production was running, however we fell slightly short of the production target due to the four-week strike in the spring. The summer shutdown was also longer than normal, as during the summer the sawmill was stopped completely for four weeks due to holidays and the coronavirus. Energy efficiency did not improve during 2020 in comparison to 2019: the biggest reason for this was smaller production amounts and, through that, less efficient use of the drying kilns. The Alholma sawmill did not receive any environmental feedback or reports on deviations from external stakeholders in 2020.

Safety as a part of expertise
Safety is an integral part of our everyday actions and expertise. We strive to reduce and prevent accidents through continuous improvements, effective risk management and preventative safety work. In 2020, the employees of the pulp mill and sawmill carried out 2,050 safety rounds and discussions and made 1,647 safety observations and hazardous situation reports.

Local collaboration in many forms
We are committed to promoting the vitality of the community near our place of business through active collaboration and open dialogue with different stakeholders, as well as through different sponsorship projects, for example. Our focus is on activities and projects that are related to our business, support innovation and sustainable development, or promote local vitality and well-being. In 2020, our sponsorship was mostly targeted at supporting sport and exercise opportunities, the vitality of cultural life and education for children and young people.

As a company that operates in the immediate proximity of bodies of water, we feel that moving safely on the water is important. We were involved, amongst other things, in supporting the work boat procurement of Skärgårdsrådet, which takes care of the water bodies of the area. In the summer we also made a donation to the Pietarsaari Marine Rescue Association, which does valuable work as a voluntary association to make moving on the water safe.

Tomi Heikkinen
Environmental Manager

Simon Fagerudd
General Manager of the Integrated Unit and Pulp Mill

Mika Åby
Director, Alholma Sawmill

UPM Pietarsaari

Responsibility figures 2020

Waste

42%

of the waste generated at the pulp mill during the year was moved to interim storage or utilised directly

Water

Discharges causing biological oxygen demand in the bodies of water (BOD_7) have decreased by

79%

per tonne of pulp produced since 2011

Nitrogen emissions contributing to eutrophication of the water system have decreased by

51%

since 2011

Discharges of solids have decreased by

55%

since 2011

Air

Particle emissions have decreased by

83%

per tonne of pulp produced since 2011

Energy

Of the energy produced by the mill, over

99%

is generated with renewable fuels

Certified wood

The proportion of certified fibre in the production of pulp

79%

The proportion of PEFC- and/or FSC-certified fibre in the production of pulp. UPM's goal is that all fibre used is certified by 2030.

Health

The amount spent on the wellbeing of pulp mill and sawmill employees was

EUR 115,000

Supply Chain

97%

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

Consumption impact*

The mill integrate's consumption impact in region approx.

EUR 15 million

in Finland approx.

EUR 27 million

*Generated through the private consumption of commodities from internal and indirect employees' net wages.

Safety

The employees of the pulp mill and sawmill carried out

2,050

safety rounds and discussions and made

1,647

safety observations and hazardous situation reports

Taxes

The mill integrate's local tax impact approx.

EUR 8 million

Real estate tax EUR 0.5 million

Estimate of tax on salaries EUR 2.6 million

Estimate of corporate income tax EUR 4.8 million based on the number of employees*

*Approximately 30% of corporate income tax goes to municipalities, which is split between each municipality according to their share of business activities and forests operations.

Employment

The mill integrate employed

381 people

60 summer employees

Indirect employment effect in region approx.

350 persons

Air

As in previous years, the pulp mill was more than self-sufficient in electricity due solely to the energy obtained from the burning of black liquor. The excess electricity was sold to the electrical grid through UPM Energy.

The pulp mill and sawmill supplied bark and wood-based residues obtained from the debarking of logs and pulpwood to Alholmens Kraft for use as fuel. Measured through specific emission factors, emissions into the air were at a good BAT level and all emission parameters were below the permit regulations, except for the eradication of odorous gases in the ramp-up after the shutdown. The ramp-up and shutdown situations of the mill related to planned and unplanned stoppages caused some odour issues in the vicinity of the mill.

The pulp mill's long-term objective is to become a carbon dioxide-neutral pulp mill. In accordance with the objective, direct and indirect fossil carbon dioxide emissions have been systematically reduced at the mill. The objective is in line with the concern's responsibility targets for 2030.

The proportion of renewable fuels in pulp production was again kept high, i.e. at 99.0%.

The particle emissions of pulp production were successfully reduced by 83% from the level of 2011.

The burning of odorous gas in the soda recovery boiler and back-up burner was successful during the year, with an efficiency of 99.1%.

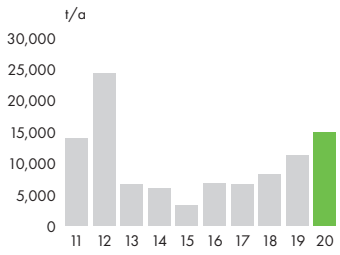
EMISSIONS INTO THE AIR FROM PULP PRODUCTION IN 2020

	Particles t/a	Sulphur dioxide t SO_2/a	TRS t S/a	Nitrogen oxidest NO_2/a	Chlorine compounds t Cl/a
Soda boiler	63	11	7.1	874	
Lime sludge kiln	3	9	0.7	43	
Odorous gas back-up burner (flare)		85			
Bleaching 1					4.6
Bleaching 2					0.3
Fugitive emissions			25.7		
In total	65	105	34	917	4.9

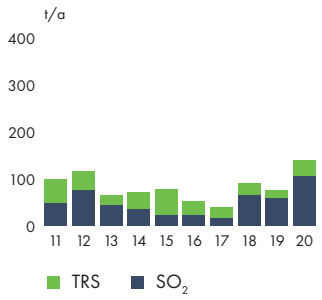
ODOROUS GAS ERADICATION, % of time

	2017	2018	2019	2020
Burnt in the soda boiler	99.0	97.7	99	96.9
Burnt in the back-up burner (flare)	0.7	1.9	0.9	2.2
Bypassed into the flue	0.3	0.4	0.1	0.9

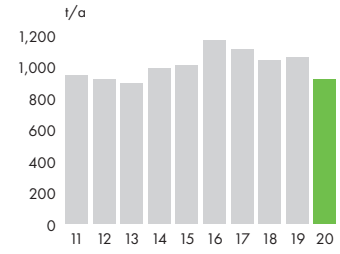
Development in fossil carbon dioxide emissions at the Pietarsaari mill



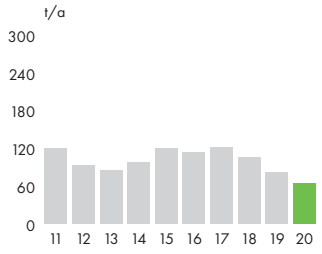
Gaseous sulphur compounds



Nitrogen oxides, NO_2



Particles



Water

Raw water procurement

UPM Pietarsaari takes the raw water used at the mill from Lake Luodonjärvi. In 2020, the total consumption of water was 53,137,625 m³ at the pulp mill and sawmill. Less than half of the raw water was used as cooling water, and the rest was used as process water at the pulp mill. The Alholma sawmill's proportion of the overall consumption of raw water was around 35,000 m³, i.e. less than 0.1%.

Discharges into the sea

The long-term objective of the pulp mill for the waste water load is to substantially reduce discharges from the level of 2008 by 2030. Waste water discharges compared to the permit conditions were almost at the same level as the previous year. In 2020, waste water discharges were clearly below all the limits specified in the environmental permit.

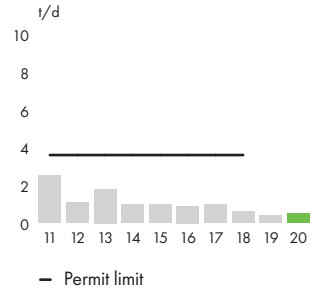
As a result of the optimisation of the waste water plant, nutrient emissions, nitrogen and phosphorus were still below the internal target level. The sea area next to Pietarsaari is limited in terms of phosphorus with regard to eutrophication, which is why a particular effort has been made to reduce phosphorus emissions without reducing the efficiency of waste water purification. Compared to the level of 2011, phosphorus emissions have remained virtually the same per tonne of pulp produced, while emissions causing biological oxygen demand in the water system (BOD_7) have been successfully reduced by 79%, nitrogen emissions by 51% and discharges of solids by 55%.

The COD emissions of the waste water of the pulp mill, per tonne of pulp produced, were reduced by 27% by 2020 from the level of 2008. The target for 2030 is a reduction of at least 40%.

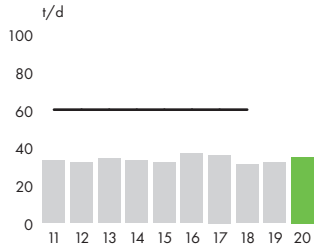
TOTAL LOAD COMPARED TO PERMIT CONDITIONS 2020

	Annual average compared to permit conditions 2020	Target 2020	Permit condition, annual average
COD, t/d	31	35	45
BOD_7, t/d	0.4	1.0	
Nitrogen, kg/d	156	400	500
Phosphorus, kg/d	18	35	45
AOX, t/d	0.18	0.20	0.45
Solids, t/d	1.2	1.5	4

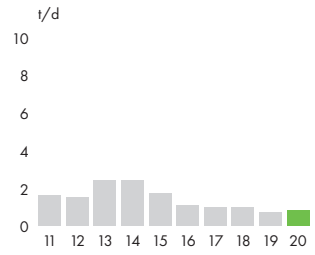
Biological oxygen demand, BOD_7



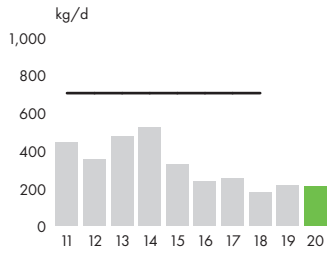
Chemical oxygen demand, COD



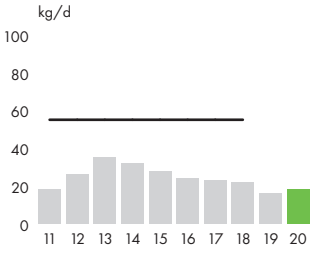
Total suspended solids, TSS



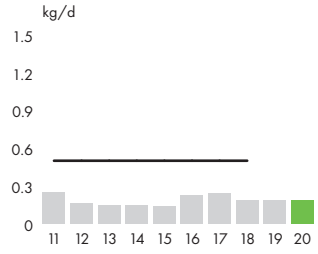
Nitrogen, N



Phosphorus, P



Adsorbable organic halides, AOX



Waste and by-products

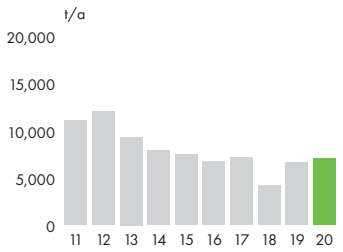
UPM Pietarsaari's landfill is located on the mill site. In 2020, the pulp mill and sawmill produced a total of 12,258 tonnes of solid waste. 42% of the waste generated during the year was moved to interim storage or utilised directly.

A total of 7,044 tonnes of waste from the pulp mill and sawmill was taken to the landfill, of which more than 97% was green liquor dregs. The concern-led work to utilise green liquor dregs continues. An objective related to the circular economy is that all sidestreams are utilised and waste is not taken to landfill after 2030. The amount of landfill waste per tonne of pulp produced has decreased by 33% from the 2011 comparison level.

1,553 tonnes of waste fractions to be utilised later were taken to interim storage. All waste amounts are stated as dry matter tonnes.

56.2 tonnes of hazardous waste was taken elsewhere for processing. Of this, approximately 28.5 tonnes of waste oils and lubricants were directed for further use.

Landfill waste, dry weight



SOLID WASTE 2020 (dry weight, t/year)

	To landfill	To interim storage	For utilisation
Green liquor dregs	6,811		
Lime		718	
Wood and bark residue		544	820
Asphalt		284	167
Cable and metal scrap			778
Energy waste			94
Construction waste	233	3	792
Soil constituents and timber yard cleaning waste		4	955
Total solid waste in 2020	7,044	1,553	3,606
Total solid waste in 2019	6,606	17,019	3,568

BY-PRODUCTS 2020 (dry weight, t/a)

	For utilisation
Lime sludge calcium	1,129
Green liquor dregs	119
Total by-products in 2020	1,248

Management of crises and exceptional situations

Precisely-defined internal instructions are followed in the management and communications of crises and exceptional situations. The following things are considered crises and exceptional situations at UPM's mill properties and site:

- serious accidents at work and when travelling to or from work
- serious accidents (e.g. large fires, explosions, chemical accidents)
- environmental damage
- serious disruptions in production
- other exceptional situations (sabotage, demonstrations, occupational health and safety risks, risks related to UPM's reputation etc.)
- from outside the mill, e.g. threatening situations, such as problems coming from another industrial plant

Operational management means, for example, the controlled shutdown of production and other measures to bring the exceptional situation under control. Incident investigation and the flow of information proceed in accordance with the responsibility in the line organisation and agreed roles. The crisis communication group either consists of members of the mill's management group or is agreed on separately on case-by-case basis.

Other external companies operating on the mill site will follow their own guidelines, however so that all emergencies are reported to the Ostrobothnia emergency response centre.

Crises and exceptional situations are regularly rehearsed, both independently and in collaboration with rescue authorities, to maintain and improve operational reliability.

Numerous drills related to rescue operations are conducted annually. In 2020, the most notable drill was a major accident drill carried out together with the authorities, relating to a chlorine dioxide leak.

In 2020, the corona pandemic caused an exceptional situation for the operations of the mill. Separate exceptional situation guidelines were drawn up at the pulp mill due to the pandemic, covering both the mills' own personnel and contractors. A corona management group set up for the mill met regularly.

Societal responsibility

Engaging with society
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

We impact local communities and societies in many ways. Understanding the impact that we have is an essential component of our business success. In many locations, we are a significant employer, taxpayer and partner to local entrepreneurs, making positive contributions to the local economy. We apply several precautionary measures to mitigate and remedy potential negative environmental and social impacts on our surrounding communities.

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. Taxes are paid in accordance with the local tax legislation and regulations of the country in question.

In 2020, UPM's corporate income taxes paid and property taxes were approximately EUR 178 million in total (EUR 211 million in 2019).

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.

Local collaboration in many forms
Most of our sponsorships in 2020 were focused on supporting the vitality of sport, learning and cultural life. We were involved in developing the exercise possibilities of Pietarsaari by sponsoring the wood required for new fitness stairs. During the year, there were a total of 15 different sports-related sponsoring projects.

The year was exceptional in many ways and it brought with it new kinds of local collaboration. We donated 20,000 face protectors for the use of the Vaasa healthcare district, through which they were distributed to the municipalities to be used in preventing the spread of the coronavirus. We have also traditionally supported local benefactors, instead of sending Christmas cards. In 2020 we remembered the staff of the Malmi healthcare area working with corona testing.

In the summer we made a donation to the Pietarsaari Marine Rescue Association, which does valuable work as a voluntary association to make moving on the water safe. The donation is aimed at enabling the training of new marine rescuers and the procurement of gear for crews, as well as maintenance of equipment. As a company that operates in the immediate proximity of bodies of water, we feel that moving safely on the water is important. We were also involved in supporting the boat procurement of Skärgårdsrådet, which takes care of the area's bodies of water. Skärgårdsrådet is an association formed in Luoto which works towards the safety and maintenance of the waters of our area by, amongst other things, dredging and maintenance of buoys.

We invest in the future by actively collaborating with educational institutions in the area. Our aim is to increase knowledge about jobs in the sector and encourage young people to study the sector and work in the forestry industry. In 2020, we provided summer jobs for 60 people, and seven people started their studies in the pulp mill's two-year apprenticeship contract training.

Learning is important to us in its many different forms. Our company sponsors, amongst others, the Wisamatte mathematics competition held for sixth- and ninth-grade pupils in the Pietarsaari area. In the autumn we went on a forest excursion with the Oxhamn and Etelänummi schools and sixth-graders and donated material for the first aid exercises of scouts. Our employees also actively participated in the Finnish Forest Industries' Forest Ambassador campaign, where we told upper comprehensive school pupils about the forest industry and jobs in the field.

Responsible sourcing and qualified supplier spend
UPM requires its suppliers to comply with the UPM Supplier Code and Third Party Code (Code) that defines suppliers' minimum requirements in terms of responsibility with regard to matters such as environmental impact, human rights, labour practices, health and safety, product safety, corruption and bribery.

UPM's target is to have 100% of raw material spend and 80% of all spend covered by UPM Supplier and Third Party Code by 2030. In 2020, 96% of UPM's raw material spend and 84% of all spend was covered by UPM Supplier and Third Party Code.

Safety
Our goal in UPM is to be the industry leader in health and safety. Our clear objective is zero fatal and serious accidents. Safety is fully embedded in our daily activities and is not considered less or secondary than any other interest. We strive to reduce and eliminate accidents under our control through continuous improvement and effective risk management.

Our employees, as well as business partners and their employees, are required to adopt safe work practices and to comply with the rules and standards we have established.

Before accessing UPM production site, contractors get UPM safety training, which presents and demonstrates the basic safety requirements. This is complemented with a job specific safety induction and a permit to work.

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	Sawn timber	250,000 m^3	280,000 m^3	280,000 m^3
	Pulp	800,000 Adt	800,000 Adt	800,000 Adt
Raw materials and chemicals	Timber Cooking and bleaching chemicals Other	See UPM Corporate Environmental and Societal Responsibility Statement for more information		
Energy	Biomass-based fuels	99.54%	99.43%	99.03%
	Fossil fuels	0.46%	0.57%	0.97%
	Purchased energy	See UPM Corporate Environmental and Societal Responsibility Statement for more information		
Emissions to air	Particles	105 t	81 t	65 t
	Sulphur dioxide, SO_2	131 t	58 t	105 t
	Odorous sulphur compounds, TRS (S)	25 t	17 t	34 t
	Nitrogen oxides, NO_2	1,037 t	1,059 t	917 t
	Carbon dioxide, CO_2 (fossil)	8,101 t	11,190 t	14,849 t
Water intake	Process and cooling water	62,617,920 m^3	60,208,278 m^3	53,137,625 m^3
Discharges to water	Cooling and rain water	27,429,619 m^3	29,998,088 m^3	30,496,815 m^3
	Purified waste water	32,271,599 m^3	33,799,276 m^3	26,334,110 m^3
	Biological oxygen demand, BOD_7	232 t	153 t	139 t
	Chemical oxygen demand, COD_{cr}	12,571 t	10,906 t	11,570 t
	Total suspended solids, TSS	347 t	261 t	209 t
	Total phosphorus, P_{tot}	8 t	6 t	6 t
	Total nitrogen, N_{tot}	47 t	64 t	54 t
	Adsorbable organic halides, AOX	68 t	69 t	65 t
Side products	Lime sludge calcium	312 t	1,429 t	1,129 t
	Green liquor dregs	2,814 t	1,356 t	119 t
	In total	3,126 t	2,785 t	1,248 t
Waste[1]	Solid waste to landfill (abs. dry)			
	– Green liquor dregs	4,140 t	6,527 t	6,811 t
	– Construction waste	75 t	79 t	233 t
	– Other waste	0 t	0 t	0 t
	– In total	4,215 t	6,606 t	7,044 t
	Recyclable waste (abs. dry)			
	– Metal waste	80 t	625 t	778 t
	– Wood and bark waste	1,611 t	1,473 t	1,775 t
	– Energy waste	79 t	75 t	94 t
	– Asphalt	913 t	950 t	167 t
	– Construction waste	151 t	445 t	792 t
	– In total	5,047 t	3,568 t	3,606 t
	Waste in interim storage (abs. dry)			
	– Branch rejects	0 t	0 t	0 t
	– Lime	259 t	0 t	718 t
	– Metal waste		26 t	0 t
	– Asphalt	913 t	1,254 t	284 t
	– Wood and bark waste	1,271 t	346 t	544 t
	– Construction waste	310 t	25 t	3 t
	– Soil constituents and timber yard cleaning waste		219 t	4 t
	– Sludge[2]	5 t	15,149 t	
	– In total	2,758 t	17,019 t	1,553 t
	Hazardous waste[3]	64.9 t	41.60 t	56.30 t
Land use	– Total use of land	210 ha	210 ha	210 ha
	– Total sealed area			200 ha
	– Total nature-oriented area on site			10 ha
	– Total nature-oriented area off-site			5 ha

[1] Waste stated as dry weight
[2] Sludge moved from the coagulation basin to the interim storage field
[3] Hazardous waste stated as total weight

Performance against targets in 2020

TARGET		ACHIEVED	COMMENT
Pulp mill	Clean Run environmental irregularity observations' class 3–5 irregularities: 0	No	One category 3 report of an accumulation disturbance relating to strong odorous gases.
	Reduction of landfill waste – solid waste utilisation investigations continue – emphasis on the utilisation of green liquor dregs	No	The utilisation rate of green liquor dregs decreased from that of the previous year. Utilisation targets for green liquor dregs are still being sought, led by the concern.
	The implementation of the development programme based on the energy conservation agreement is continuing	Yes	As in previous years, the pulp mill was more than self-sufficient in terms of energy. The mill has implemented the ISO 50001 Energy Management System.
Alholma sawmill	Investigation into the adoption of/the adoption of bio-oilas conductive oil	No	Investigation done, adoption still underway.
	Energy review done during the year	Yes	Drying plant-specific energy measurement in use and action plan defined.
	The sawmill's Clean Run environmental irregularity observations' class 3–5 irregularities: 0	Yes	No class 3/5 irregularities.
	Number of environmental observations: at least one per month	Yes	Making of environmental observations included in the targets.
	Environmental review rounds at leastonce a month	Yes	Environmental review rounds realised as planned.

Targets for 2021

TARGET	
Pulp mill	**Alholma sawmill**
Clean Run environmental irregularity observations' class 3–5 deviations: 0	Improvement in energy efficiency by 1% at timber level
Solid waste to landfill < 7.6 kg/t of pulp	Environmental irregularities: 0 Clean Run 3–5 irregularities
Testing of recycled nutrients as an additional nutrient source for the waste water purification plant	Environmental observations, at least two per month
Management and monitoring of the conditions of the mill and waste water plant Consumption of process water < 35.6 m^3/t of pulp COD emissions of purified process water < 17.5 kg/t of pulp and < 45 t/d AOX emissions of purified process water < 0.13 kg/t of pulp and < 0.45 t/d Phosphorus emissions of purified process water < 45 kg/d Nitrogen emissions of purified process water < 500 kg/d Solids emissions of purified process water < 4 t/d	Environmental review rounds, at least two rounds per month
Specific emissions of acidifying flue gas < 1.40 kg/t of pulp Specific emissions of fossil carbon dioxide < 3 kg/t of pulp	
Management and monitoring of burning conditions Soda boiler – NO_x emissions < 250 mg/m^3(n) – SO_2 emissions < 40 mg/m^3(n) – TRS emissions < 8 mg/m^3(n) – particle emissions < 40 mg/m^3(n) Lime sludge kiln – NO_x emissions < 400 mg/m^3(n) – SO_2 emissions < 160 mg/m^3(n) – TRS emissions < 16 mg/m^3(n) – particle emissions < 45 mg/m^3(n)	

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

On the basis of this examination, the environmental verifier has herewith confirmed on 2021-04-07 that the environmental management system, the UPM Pietarsaari Environmental and Societal Responsibility 2020 statement and the information concerning UPM Pietarsaari 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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