

UPM Pietarsaari

ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2021



UPM Pietarsaari

The UPM's Pietarsaari integrated mill unit consists of the Pietarsaari pulp mill, the Alholma sawmill and UPM Forest 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 pulp, sawn timber, paper, processed paper products and energy. UPM Forest is responsible for the procurement of wood for the pulp mill and sawmill. The logs are sawn at the Alholma sawmill, and pulp is made from 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 residues are used by the Alholmens Kraft power plant to generate electricity, steam and district heating.

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



UPM Pietarsaari Environmental and Societal Responsibility 2021 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 2021. 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 2023.

UPM delivers renewable and responsible solutions and innovate for a future beyond fossils across six business areas: UPM Fibres, 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 17,000 people worldwide and our annual sales are approximately EUR 9.8 billion. Our shares are listed on Nasdaq Helsinki Ltd. UPM Biofore – Beyond fossils. www.upm.com

	Pulp mill	Alholma sawmill
Production capacity	800,000 t	280,000 m ³
Personnel	267	75
Products	Softwood pulps: UPM Conifer UPM Conifer Thin UPM Betula UPM Betula TCF	pine and spruce sawn timber, woodchips, sawdust and bark
By-products	Lime sludge calcium and green liquor dregs	
Residues	Tall oil and turpentine	
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 System PEFC, Programme for the Endorsement of Forest Certification FSC® wood origin monitoring system – Forest Stewardship Council®	
	The certificates can be found with the Certificate Finder tool at www.upm.com/responsibility	
Environmental labels	EU Ecolabel	



For more information about FSC certification visit www.fsc.org



For more information about PEFC certification visit www.pefc.org

Review of year 2021



Pulp mill

2021 was an excellent year for the pulp mill in terms of production. A new annual production record for the plant was achieved without any quality and safety issues. A number of other records were also broken: the birch line drying machine and the birch and softwood fibre lines set new records for total production. The production process was also successfully stepped up in the evaporation plant, the causticizing plant and the recovery boiler. The new birch line also improved pulp quality and reduced the mill's process water consumption.

Obligations related to environmental protection have been taken care of systematically and in accordance with the environmental permit. A key long-term goal for the pulp mill is to increase production without causing adverse environmental impacts. For example, the target of keeping the amount of wastewater below 35 cubic metres per tonne of pulp produced was already achieved in 2021. New production equipment, such as new washers for the birch line, also allowed maintaining production with less environmental impact and reduced water consumption. For the first time, the wastewater treatment plant tested the use of recycled nutrients to replace industrially produced nutrients. Calculated as specific emissions, discharges into the sea and emissions into the atmosphere were clearly in line with the BAT level (BAT ref. 2014). In terms of fossil carbon dioxide emissions, the Pietarsaari pulp mill is still among the best in Europe.

67 environmental observations related to preventative environmental safety were recorded at the pulp mill. Permit conditions were not exceeded. Work on the recovery of solid waste has continued actively in the UPM Group. UPM has set a target for no process waste to

be taken to the landfill or burnt without energy recovery after 2030. The work to promote a circular economy continues, and the objective is to reintroduce sidestreams from operations into the material cycle.

Alholma sawmill

The year at the Alholma sawmill went well, both in terms of production and environment. Production efficiency was at a good level and the sawmill department set a production record for a single sawing line. A two-week summer shutdown was held in July, when machines were serviced, one department at a time. Energy efficiency in 2021 remained at the same level as in 2020. Although production was running at full capacity, the strike in 2020 and the consequent absence of the dryers in February meant that energy efficiency did not improve. The sawmill did not receive any environmental feedback or reports on deviations from external stakeholders in 2021.

Safety as part of professionalism

Safety is an integrated 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 2021, the employees of the pulp mill and sawmill were responsible for 1,564 safety walks and discussions and 1,489 safety observations and incident 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 2021, our sponsorship mainly focused on supporting sports activities for children and young people, as well as education in maths and science.



Tomi Heikkinen
Tomi Heikkinen
Environmental Manager

Simon Fagerudd
Simon Fagerudd
General Manager of the
Integrated Unit and Pulp Mill

Mika Åby
Mika Åby
Director, Alholma Sawmill

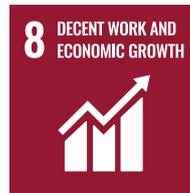
Contribution to UN Sustainable Development Goals in 2021



Waste

30%

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



Safety

The employees of the pulp mill and sawmill carried out

1,564

safety rounds and discussions and made

1,489

safety observations and hazardous situation reports.



Air

Fossil carbon dioxide emissions have reduced by

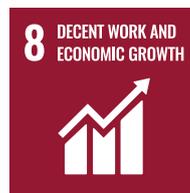
82%

since 2012.

Particle emissions have decreased by

38%

per tonne of pulp produced since 2012.



Employment

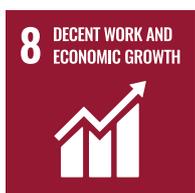
The integrated mill unit directly employed

356
persons and

78
summer
employees

The indirect local impact on employment was about

325
persons



Health

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

EUR 120,000



Energy

Out of the total energy produced at the pulp mill,

99.8%

is produced from renewable fuels.



Supply Chain

96%

of raw materials spend (excl. wood) qualified against the UPM's Supplier and Third Party Code.



Water

Discharges of solids have decreased by

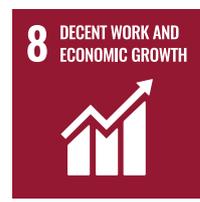
40%

since 2012.

Pulp mill water consumption per tonne of pulp produced decreased

19%

since 2012.



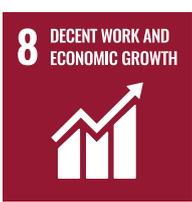
Taxes

The integrated mill unit's impact on taxes was approximately

EUR 17 million

Property taxes: EUR 0.6 million
Estimated municipal taxes on personnel salaries: EUR 3 million
Estimated corporate tax of EUR 13.7 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*

The local consumption impact of the integrated mill is approximately

EUR 14 million

The consumption impact in the whole of Finland is approximately

EUR 25 million

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



Certified Fibre

The proportion of certified fibre in the production of pulp

72%

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

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 pulp-wood to Alholmens Kraft for use as fuel. Measured with specific emission factors, all airborne emissions were within BAT levels. All emission parameters remained below permit regulations. The ramp-up and shutdown situations of the mill due 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 Group's responsibility targets for 2030.

The proportion of renewable fuels in pulp production was again kept high, i.e. at 99.8%.

Pulp production has succeeded in reducing particulate emissions by 38% compared to 2012.

The burning of odorous gas in the recovery boiler and the backup burner was successful during the year, with an efficiency of 98.9%.

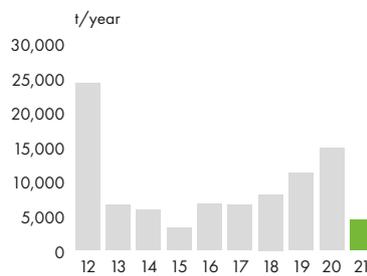
EMISSIONS INTO THE AIR FROM PULP PRODUCTION IN 2021

	Particulates t/year	Sulphur dioxide t SO ₂ /year	TRS t S/year	Nitrogen oxides t NO ₂ /year	Chlorine-compounds t Cl/year
Recovery boiler	53	8	5.3	950	
Lime kiln	5	6	0.03	50	
Reserve boiler		48			
Bleaching 1					4.3
Bleaching 2					0.02
Fugitive emissions			7.9		
Total	58	63	13	1,000	4.3

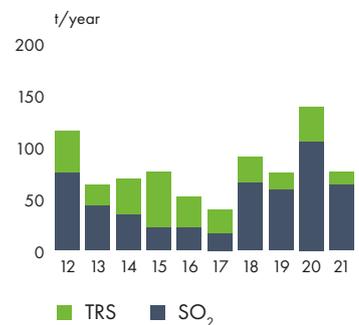
ODOROUS GAS ERADICATION, % of time

	2018	2019	2020	2021
Burnt in the recovery boiler	97.7	99	96.9	97.9
Burnt in the back-up burner (flare)	1.9	0.9	2.2	1.0
Bypassed into the flue	0.4	0.1	0.9	1.1

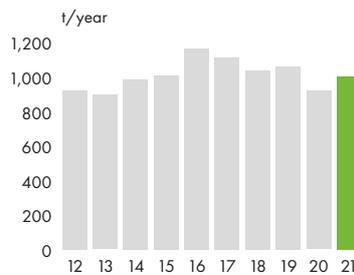
Development in fossil carbon dioxide emissions at the Pietarsaari mill



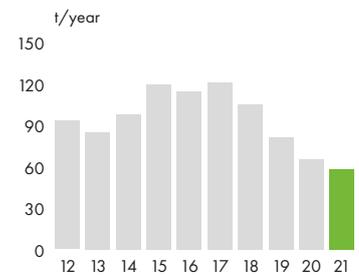
Gaseous sulphur compounds



Nitrogen oxides, NO₂



Particulates





Raw water procurement

The pulp mill takes its raw water from Lake Larsmo. In 2021, the total water consumption of the pulp mill and sawmill was 66,955,366 m³. 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. < 0.1%.

Discharges into the sea

The pulp mill's long-term goal is to substantially reduce wastewater discharges from 2008 levels by 2030.

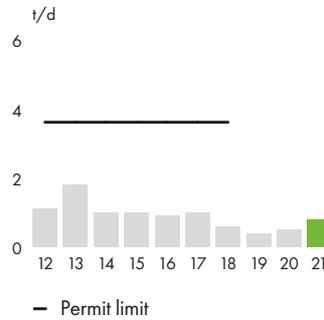
A slight increase in emission in 2021 is due to a planned recycled nutrient trial to test the suitability of the biogas plant leachate as a nutrient source for the wastewater plant. In 2021, wastewater discharges were clearly below all the limits specified in the environmental permit.

The eutrophication of the marine area off the coast of Pietarsaari is significantly impacted by the amount of phosphorus. Therefore, the pulp mill's wastewater treatment plant has sought to optimise phosphorus use without reducing the treatment efficiency of the mill's wastewater. Compared to the 2012 baseline, phosphorus emissions per tonne of pulp produced have been reduced by 31%, (BOD₇) emissions have been reduced by 41%, nitrogen emissions by 25% and solid waste emissions by 40%.

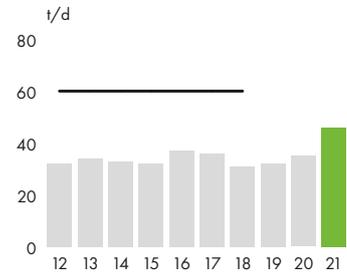
TOTAL LOAD COMPARED TO THE PERMIT CONDITION 2021

	Annual average compared to the permit condition 2021	Permit condition, annual average
COD, t/d	39	45
BOD ₇ , t/d	0.9	
Nitrogen, kg/d	222	500
Phosphorus, kg/d	26	45
AOX, t/d	0.22	0.45
Solids, t/d	2.3	4

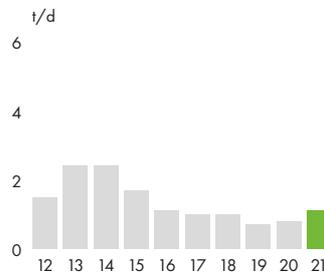
Biological oxygen demand, BOD₇



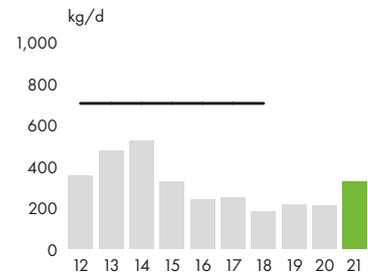
Chemical oxygen demand, COD



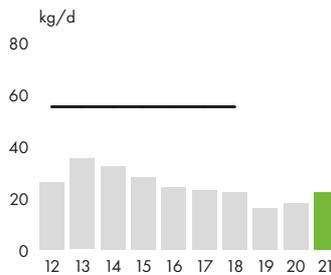
Total suspended solids, TSS



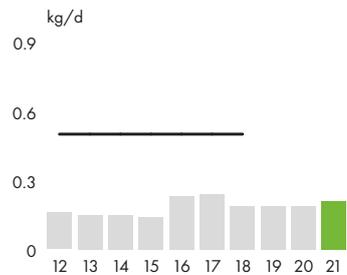
Nitrogen, N



Phosphorus, P



Adsorbable organic halides, AOX





Waste and by-products

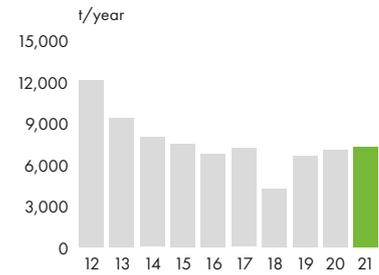
UPM Pietarsaari's landfill is located on the mill site. In 2021, a total of 11,893 tonnes of solid waste was generated at the pulp mill and sawmill. 30% of the waste generated during the year was moved to interim storage or utilised directly.

A total of 7,256 tonnes of pulp mill and sawmill waste was placed in the landfill, of which more than 99% was green liquor dregs. The Group-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 the landfill after 2030. The amount of landfill waste per tonne of pulp produced has decreased by 40% from the 2012 comparison level.

A total of 3,445 t of waste fractions for subsequent recovery were taken to intermediate storage. 42.4 tonnes of hazardous waste was sent for disposal off-site. About 31.5 tonnes of waste oils and lubricants were diverted for further recovery.

Landfill waste, dry weight



SOLID WASTE 2021 (dry weight, t/year)

	To landfill	To interim storage	For utilisation
Green liquor dregs	7,205		
Lime		1,310	
Wood and bark waste			208
Asphalt		358	
Cable and metal scrap			571
Energy waste			104
Construction waste	51	24	54
Soil constituents and wood yard cleaning waste		1,752	213
Sewage sludge		1	
Total solid waste in 2021	7,256	3,445	1,150
Total solid waste in 2020	7,044	1,553	3,606

BY-PRODUCTS 2021 (dry weight, t/year)

	For utilisation
Lime sludge calcium	2,327
Green liquor dregs	1,342
Total by-products in 2020	3,670

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 includes the controlled shutdown of production and measures required to gain control of the exceptional situation, among other things. Investigation of the incident and the flow of information happens in accordance with the organisation's chain of command and agreed roles. A crisis management team is in place at the mill to manage an emergency or crisis situation. 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.

Societal responsibility

Engaging with society

Well-functioning dialogue with stakeholders is a key factor for our success. 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.

UPM is a significant operator in Pietarsaari. In 2021, UPM's operations employed 325 people directly and the indirect effect on employment was 350 people. Furthermore, in the summer 78 summer employees worked for UPM.

Tax impact

The tax revenue generated by UPM's operations has a significant social impact. We pay corporate income taxes in the countries where we create added value and generate profits resulting from that. Due to our corporate and operational structure, we mainly report and pay corporate income taxes in the countries of production and in the countries where innovations are being developed. In addition to the income taxes that we pay, our various production inputs and outputs are also subject to taxation. Taxes are paid in accordance with the local tax decrees and regulations.

In 2021, UPM's corporate income taxes paid and property taxes were approximately 306 million euros in total (178 million euros in 2020).

The operations of our mills also support local communities in many ways. The property taxes paid and the municipal share of corporate income taxes support the local economy. In addition, the municipal taxes and social security contributions that the employees pay from their wages have a significant local impact. Furthermore, the purchasing power of UPM's employees and subcontractors maintains and enhances the vitality of local communities.

Local collaboration in many forms

We support sustainable development and promote the financial and mental well-being of the communities around us by participating in numerous community projects as a company. Our work in this arena is clearly connected to our Biofore Strategy and responsibility targets. It is coordinated under the umbrella of our Biofore Share and Care programme.

The Biofore Share and Care programme comprises three forms of support: sponsorships, donations and employee volunteering. 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. The Biofore Share and Care programme's three priority areas are



Reading and learning, Local engagement and Beyond fossils.

In 2021, our sponsorship in the Pietarsaari region focused mainly on supporting sports and physical education opportunities for children and young people, as well as the learning of maths and science. 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 trip with 6th graders from the Oxhamn and Etelännummi schools. 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.

We also contributed to supporting the cultural vitality of the region and nature conservation projects. We sponsored the local Rusk Chamber Music Festival and donated to the Lepplax-Norrby Samfällida Områden Association's Storfjärden project, which aims to improve the southern part of Lake Larsmo.

We have traditionally supported local benefactors, instead of sending Christmas cards. In 2021, we donated the Christmas card money to the organization FRIDA - Free from violence.

Safety

Our goal at UPM is to be the industry leader in health and safety. Our target is to avoid serious and fatal accidents completely. Safety is an inseparable part of our daily activities and is not seen as secondary to anything else. We strive to reduce and eliminate accidents through continuous improvements and effective risk management.

In 2021, there were two lost-time accidents at the pulp mill. The corresponding number for the sawmill was five. Proactive safety

work was actively carried out at both the pulp mill and the sawmill: a total of 1,564 safety rounds and discussions were recorded, as well as 1,489 safety observations and an incident report.

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 access to UPM's production sites, contractors participate in UPM safety training, which presents the basic safety requirements. This is complemented by job-specific safety induction and a work permit.

Responsible sourcing and qualified supplier spend

UPM is committed to responsible procurement practices throughout the procurement chain. We work closely with our suppliers to ensure that they understand and meet all of the company's requirements for sustainable development and responsibility.

UPM requires its suppliers to comply with the UPM Supplier 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, occupational health and safety, and zero tolerance to bribery and corruption.

UPM's aim is that by 2030 100% of the value of raw material procurements and 80% of the value of all procurements come from suppliers who have committed to UPM's Code. In 2021, 96% of the value of UPM's raw material procurements and 86% of the value of all procurements came from suppliers like these. At UPM Pietarsaari, 96% of raw material spend (excl. wood) was qualified against the UPM's Supplier and Third-Party Code.

Environmental parameters

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

		2019	2020	2021
Production capacity	Sawn timber	280,000 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	See UPM Corporate Environmental and Societal Responsibility Statement for more information		
	Cooking and bleaching chemicals			
	Others			
Energy	Biomass-based fuels	99.43%	99.03%	99.8%
	Fossil fuels	0.57%	0.97%	0.2%
	Purchased energy	See UPM Corporate Environmental and Societal Responsibility Statement for more information		
Emissions to air	Particulates	81 t	65 t	58 t
	Sulphur dioxide, SO ₂	58 t	105 t	63 t
	Odorous sulphur compounds, TRS (S)	17 t	34 t	13 t
	Nitrogen oxides, NO ₂	1,059 t	917 t	1,000 t
	Carbon dioxide, CO ₂ (fossil)	11,190 t	14,849 t	4,377 t
Raw water	Process and cooling water	60,208,278 m ³	53,137,625 m ³	66,955,366 m ³
Discharges to water	Cooling and rain water	29,998,088 m ³	30,496,815 m ³	33,623,923 m ³
	Purified waste water	33,799,276 m ³	26,334,110 m ³	29,500,742 m ³
	Biological oxygen demand, BOD ₇	153 t	139 t	316 t
	Chemical oxygen demand, COD _{cr}	10,906 t	11,570 t	14,634 t
	Total suspended solids, TSS	261 t	209 t	351 t
	Total phosphorus, P _{tot}	6 t	6 t	9 t
	Total nitrogen, N _{tot}	64 t	54 t	74 t
	Adsorbable organic halides, AOX	69 t	65 t	78 t
By-products	Lime sludge calcium	1,429 t	1,129 t	2,327 t
	Green liquor dregs	1,356 t	119 t	1,342 t
	Total	2,785 t	1,248 t	3,670 t
Waste¹⁾	Solid waste to landfill (abs. dry)			
	– Green liquor dregs	6,527 t	6,811 t	7,205 t
	– Construction waste	79 t	233 t	51 t
	– Other waste	0 t	0 t	0 t
	– In total	6,606 t	7,044 t	7,256 t
	Recyclable waste (abs. dry)			
	– Metal waste	625 t	778 t	571 t
	– Wood and bark waste	1,473 t	1,775 t	208 t
	– Energy waste	75 t	94 t	104 t
	– Asphalt	950 t	167 t	0 t
	– Construction waste	445 t	792 t	54 t
	– Soil and wood yard cleaning waste	0 t	0 t	213 t
	– In total	3,568 t	3,606 t	1,150 t
	Waste in interim storage (abs. dry)			
	– Branch rejects	0 t	0 t	0 t
	– Lime	0 t	718 t	1,310 t
	– Metal waste	26 t	0 t	0 t
	– Asphalt	1,254 t	284 t	358 t
	– Wood and bark waste	346 t	544 t	0 t
	– Construction waste	25 t	3 t	24 t
	– Soil constituents and wood yard cleaning waste	219 t	4 t	1,752 t
	– Sludge ²⁾	15,149 t		1 t
	– In total	17,019 t	1,553 t	3,445 t
Hazardous waste³⁾		41.60 t	56.30 t	42.38 t
Land use	– total amount of land use	210 ha	210 ha	210 ha
	– area impermeable to water		200 ha	200 ha
	– nature conservation-oriented area		10 ha	10 ha
	– nature conservation-oriented area outside the place of business		5 ha	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 2021

TARGET	ACHIEVED	COMMENT
Pulp mill Clean run environmental irregularity observations class 3–5 deviations: zero	Yes	The pulp mill did not exceed any permissible limits in 2021
Solid waste to landfill < 7.6 kg/t of pulp	No	Failure to find uses for green liquor dregs
Testing of recycled nutrients as an additional nutrient source for the waste water purification plant	Yes	At the pulp mill's wastewater treatment plant, Jepua Biogas Plant reject water was tested as a recycled feed source
Emission targets		
Consumption of process water < 35.6 m ³ /t of pulp	Yes	Objectives largely met. The specific emissions target for fossil carbon dioxide was not met, although the full-year results are excellent.
COD emissions from purified process water < 17.5 kg/t of pulp and < 45 t/d	Yes	
AOX emissions from purified process water < 0.13 kg/t of pulp and < 0.45 t/d	Yes	
Phosphorus emissions from purified process water < 45 kg/d	Yes	
Nitrogen emissions from purified process water < 500 kg/d	Yes	
Solids emissions from purified process water < 4 t/d	Yes	
Specific emissions of acidifying flue gas < 1.40 kg/t of pulp	Yes	
Specific emissions of fossil carbon dioxide < 3 kg/t of pulp	No	
NO _x emissions from the soda boiler < 250 mg/m ³ (n)	Yes	
SO ₂ emissions from the soda boilers < 40 mg/m ³ (n)	Yes	
Soda boiler TRS emission < 8 mg/m ³ (n)	Yes	
Soda boiler particulate emissions < 40 mg/m ³ (n)	Yes	
Furnace NO _x emission < 400 mg/m ³ (n)	Yes	
Furnace SO ₂ emission < 160 mg/m ³ (n)	Yes	
Furnace TRS emission < 16 mg/m ³ (n)	Yes	
Furnace particulate emissions < 45 mg/m ³ (n)	Yes	
Alholma sawmill Improvement in energy efficiency by 1% at timber level	Yes	Efficiency was improved by optimising the drying utilisation rates. The energy used by UPM Timber in 2021 was completely fossil-free!
Environmental irregularities: 0 Clean Run 3–5 irregularities	Yes	No Clean Run deviations in 2021
Environmental observations, at least two per month	Yes	27 completed
Environmental review rounds, at least two rounds per month	Yes	24 completed

Targets for 2022

TARGET
Pulp mill
Clean run environmental observations, class 3–5 deviations zero.
Solid process waste to landfill < 6.7 kg/t pulp by using green liquor dregs as desulphurisation lime where possible and by actively participating in the Group's recovery studies.
Management and monitoring of the conditions of the mill and wastewater treatment plant, optimising treatment plant operation and improving the efficiency of process washes.
Consumption of process water < 35.5 m ³ /t of pulp
COD emissions from purified process water < 16.6 kg/t of pulp and < 45 t/d
AOX emissions from purified process water < 0.13 kg/t of pulp and < 0.45 t/d
Phosphorus emissions from purified process water < 45 kg/d
Nitrogen emissions from purified process water < 500 kg/d
Solids emissions from purified process water < 4 t/d
Specific emissions of acidifying flue gases < 1.39 kg/t pulp by optimising the combustion conditions in the soda boiler
Optimisation of combustion conditions
NO _x emissions from the soda boiler < 250 mg/m ³ (n)
SO ₂ emissions from the soda boilers < 40 mg/m ³ (n)
Soda boiler TRS emission < 8 mg/m ³ (n)
Soda boiler particulate emissions < 40 mg/m ³ (n)
Furnace NO _x emission < 400 mg/m ³ (n)
Furnace SO ₂ emission < 160 mg/m ³ (n)
Furnace TRS emission < 16 mg/m ³ (n)
Furnace particulate emissions < 45 mg/m ³ (n)
Alholma sawmill
Improvement in energy efficiency by 1% at timber level
Clean run environmental observations, class 3–5 deviations: zero.
Environmental observations, at least two per month



Validation Statement

As an accredited environmental verifier (FI-V-0001), Inspecta Sertifointi Oy has examined the environmental management system and the UPM Pietarsaari Environmental and Societal Responsibility Statement 2021 as well as the information concerning UPM Pietarsaari in the Updated UPM Group Environmental and Societal Responsibility Report 2021.

On the basis of this examination, the environmental verifier confirmed on 4 April 2022 that the environmental management system, this UPM Pietarsaari Environmental and Social Responsibility 2021 Report and the information concerning UPM Pietarsaari in the UPM Corporate Environmental and Societal Responsibility Report 2021 are in compliance with the requirements of the EU's EMAS Regulation (EC) No. 1221/2009.



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