



UPM Pietarsaari



# Environmental and Societal Responsibility 2024

# UPM Pietarsaari

The UPM Pietarsaari mill complex consists of the pulp mill, the Alholma sawmill and the Northern regional office of UPM Forest. They are located in UPM's industrial estate in Alholma, together with Billerud, Walki and Alholmens Kraft.

The mill site is a diversified bioforestry manufacturing hub, where wood from the surrounding area is processed into pulp, sawn timber, paper, 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 Billerud 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 Pietarsaari pulp mill and the Alholma sawmill. Societal responsibility is addressed with regard to the entire mill complex.



|                             | Pulp mill   | Alholma sawmill  |
|-----------------------------|---|--|
| <b>Production capacity</b>  | 800,000 t   | 280,000 m <sup>3</sup>                                 |
| <b>Personnel</b>            | 256   | 79   |
| <b>Products</b>             | Softwood pulps: UPM Conifer<br>UPM Conifer Thin<br>UPM Betula<br>Birch pulps:   | pine and spruce timber,<br>woodchips, sawdust and bark |
| <b>Side-products</b>        | Lime and green liquor dregs   |  |
| <b>Residues</b>             | Tall oil and turpentine   |  |
| <b>Bioenergy</b>            | Heat energy and electricity   |  |
| <b>Certificates</b>         | EMAS (EU Eco-Management and Audit Scheme) – Environmental management and audit system<br>ISO 14001 – Environmental Management System<br>ISO 50001 – Energy Management System<br>ISO 9001 – Quality Management System<br>ISO 22000 – Food Safety Management System<br>ISO 45001 – Occupational Health and Safety Management System<br>PEFC Chain of Custody – Program for the Endorsement of Forest Certification<br>FSC® wood origin monitoring system – Forest Stewardship Council®<br><br>All certificates can be found at the UPM's Certificate Finder<br><a href="http://www.upm.com/responsibility">www.upm.com/responsibility</a> |  |
| <b>Environmental labels</b> | EU Ecolabel<br>Blue Angel<br>Nordic Ecolabel<br>UPM pulp products have the approval for use in EU Ecolabel and Nordic Ecolabel paper.   |  |



UPM Pietarsaari Environmental and Societal Responsibility 2024 is a supplement to the Corporate Environmental and Societal Responsibility Statement of UPM's pulp and paper mills (available at [www.upm.com](http://www.upm.com)) and provides mill-specific environmental and societal performance data and trends for the year 2024. 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 2026.

UPM is a material solutions company, renewing products and entire value chains with an extensive portfolio of renewable fibres, advanced materials, decarbonization solutions, and communication papers. Our performance in sustainability has been recognized by third parties, including EcoVadis and the Dow Jones Sustainability Indices. We operate globally and employ approximately 15,800 people worldwide, with annual sales of approximately €10.3 billion. Our shares are listed on Nasdaq Helsinki Ltd.

UPM – we renew the everyday  
Read more: [upm.com](http://upm.com)



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# Review of the year 2024



## Pulp mill

In terms of production, the pulp mill was on target for 2024. Today, the mill produces more softwood pulp, which has contributed to a slight increase in emission levels over the last couple of years. However, pulp remained at a high quality level. There was a two-week maintenance shutdown at the pulp mill in April.

Obligations related to environmental protection were covered systematically in compliance with the environmental permit. A key long-term goal for the pulp mill is to increase production without causing adverse environmental impacts. New production equipment, such as new washers for the birch line, has also allowed maintaining production with less environmental impact and reducing water consumption in the long term. Calculated as specific emissions, emissions into the sea and emissions into air were clearly in line with the BAT level (BAT ref. 2014). Long-term research to preserve the whitefish stock in the Pietarsaari area continued in cooperation with professional fishermen in the area.

The fossil carbon dioxide emissions at the Pietarsaari pulp mill are still among the lowest in Europe. A total of 61 environmental observations related to preventative environmental safety were recorded at the pulp mill.

Work on the recovery of solid waste has continued actively in the UPM Group. UPM

has set a target of no landfilling or incineration of solid process waste 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. In Pietarsaari, the circular economy is promoted together with other companies in Alholmen Industrial Park as part of the Alholmen Circular Economy Platform (ACEP) project.

## Alholma sawmill

2024 was a good year for the Alholma sawmill from an environmental point of view. Early winter was cold, which posed challenges for sawmill production. A good production performance was achieved from April at both the sawmill and the grading line. Despite the challenging market situation, there was no need to limit production. A two-week summer shutdown was held in July, when machinery was serviced and minor investment work was carried out. A new more durable recyclable protective plastic for timber was introduced in spring.

Electric car charging points were introduced in the sawmill's parking areas in the autumn. It is also planned to switch to an electric tractor in the transport of by-products. The charging unit for the tractor was completed in the autumn, and the tractor is in the commissioning phase.

A slight improvement in energy efficiency was achieved in 2024 compared to 2023. The

sawmill did not receive any environmental observations or non-compliance reports from external stakeholders.

## Safety as a part of professionalism

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 2024, the employees at the pulp mill and the sawmill carried out 2,127 safety rounds and discussions and made 1,564 safety observations and incident reports.

## Local collaboration in many forms

We are committed to developing the vitality of the local community through active cooperation and open dialogue with different stakeholders, and by supporting projects through sponsorship.

In 2024, our sponsorship was mainly focused on supporting learning, sports and physical activities among children and young people in the Pietarsaari area. We worked with many local associations and clubs. In cooperation with the City of Pietarsaari, we also built a terrace for Pietarsaari market square.

There were three environmental reports from stakeholders during the year, related to odor caused by the pulp mill's production disruptions.



Tomi Heikkinen  
Environmental Manager



Tuomas Pääkkölä  
General Manager, Pulp Mill



Mika Åby  
Director, Alholma Sawmill

# Responsibility indicators 2024

Contribution to UN Sustainable Development Goals in 2024



## Waste

**43%**

of the waste generated by the pulp mill and sawmill during the year was transferred to intermediate storage or directly recovered.



## Safety

The employees of the pulp mill and sawmill carried out

**2,127**

safety rounds and discussions and made

**1,564**

safety observations and hazardous situation reports.



## Certified fiber

**71%**

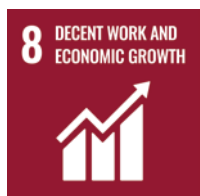
PEFC and/or FSC certified fiber in pulp production. UPM's target is to use only certified fiber by 2030.



## Supply chain

**92%**

of raw materials spend qualified against UPM Supplier and Third Party Code (wood not included)



## Health

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

approx. EUR **144,000**



## Energy

The share of renewable fuels in pulp production was

**98.9%**



## Employment

UPM Pietarsaari employed

**345** people



## Taxes

Local tax impact of the mill complex was approx.

**EUR 6** million

Real estate tax EUR 0.6 million  
Estimate of tax on salaries EUR 0.4 million  
Estimate of corporate income tax EUR 4.7 milj. 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.



## Water

Process water consumption decreased by

**8%**

Emission (BOD<sub>7</sub>) causing biological oxygen demand in the water body decreased by

**3%**

per ton of pulp produced since 2015.



## Air

Particle emissions have decreased by

**28%**

per ton of pulp produced since 2015.

# Air



As in previous years, the pulp mill was oversupplied with electricity generated by the combustion of black liquor, the process liquor from the pulp cooking process. 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 the Alholmens Kraft power plant on the mill site as fuel. Alholmens Kraft produces steam for the pulp mill, district heat for the city of Pietarsaari and electricity for the national grid.

Measured by specific emission factors, the pulp mill's airborne emissions were within BAT levels and all emission parameters remained below permit regulations. The ramp-up and shutdown situations of the mill related to planned and unplanned stoppages caused some odor issues in the vicinity of the mill. The pulp mill's long-term objective is to become a carbon dioxide-neutral pulp mill.

In line with the target, the plant has systematically reduced direct and indirect fossil carbon dioxide emissions by using fossil fuels only during production start-ups, shutdowns and incidents. The objective is in line with the Group's responsibility targets for 2030. The proportion of renewable fuels in pulp production was again maintained at a high level of 98.9%. The pulp mill's particulate emissions per ton of pulp produced decreased by 24% from 2015 levels by 2024. The burning of odorous gas in the recovery boiler and the backup burner was successful during the year, with an efficiency of 99.7%.

During the year, fossil fuels had to be used as a back-up burner due to production disruptions at the recovery boiler and during the pulp mill startups. As a result, fossil carbon dioxide emissions rose from 2015 but were still smaller than in 2023. Other emissions remained at a normal level.

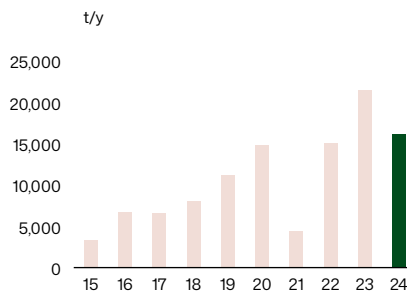
## Emissions into the air from pulp production in 2024

|                                    | Solids<br>t/y | Sulfur<br>dioxide<br>t SO <sub>2</sub> /year | TRS<br>t S/year | Nitrogen<br>oxides<br>t NO <sub>x</sub> /year | Chlorine<br>compounds<br>t Cl/year |
|------------------------------------|---------------|--|-----------------|---|------------------------------------|
| Recovery boiler                    | 82            | 6  | 8.1             | 852   |                                    |
| Lime kiln                          | 4             | 3  | 0.07            | 41  |                                    |
| Odorous gas back-up burner (flare) |               | 181  |                 |   |                                    |
| Bleaching 1                        |               |  |                 |   | 1.2                                |
| Bleaching 2                        |               |  |                 |   | 0.0                                |
| Fugitive emissions                 |               |  | 13.8            |   |                                    |
| Total                              | 86            | 190  | 22              | 892   | 1.2                                |

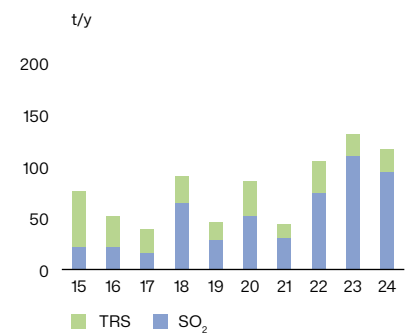
## Odorous gas eradication, % of time

|                                     | 2021 | 2022 | 2023 | 2024  |
|-------------------------------------|------|------|------|-------|
| Burnt in the recovery boiler        | 97.9 | 93.4 | 95.6 | 95.83 |
| Burnt in the back-up burner (flare) | 1.0  | 5    | 3.9  | 3.83  |
| Bypassed into the flue              | 1.1  | 1.7  | 0.6  | 0.34  |

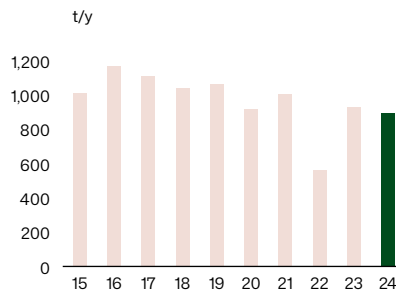
## Development in fossil carbon dioxide emissions at the Pietarsaari mill (scope 1)



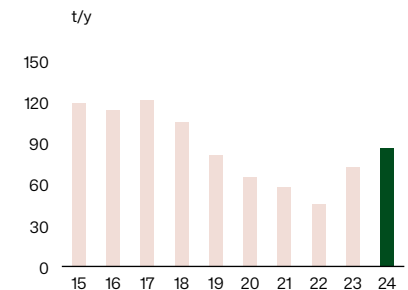
## Gaseous sulfur compounds (expressed as sulfur)



## Nitrogen oxides, NO<sub>2</sub>



## Particles



# Water



The pulp mill uses water from Lake Luodonjärvi in its production. About half of this is used as cooling water and the rest as process water. The Alholma sawmill accounts for less than < 0.1% of total water consumption. Water consumption per ton of pulp produced has decreased by approx. 8% compared to 2015.

## Wastewater

The pulp mill's long-term goal is to substantially reduce wastewater emissions from 2008 levels by 2030. In 2024, wastewater discharges were clearly below all the limits specified in the environmental permit.

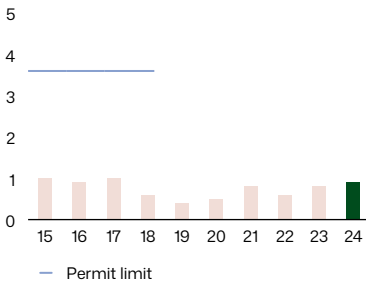
The pulp mill has moved over to producing more softwood pulp, which has contributed to the increase in the emission levels of the wastewater treatment plant. During 2024, phosphorus emissions per ton of pulp produced increased by 14%, nitrogen emissions by 25% and solids emissions by 8% per ton of pulp produced compared to 2015. Emission (BOD<sub>7</sub>) causing biological oxygen demand in the water body decreased by 3%.

### Total load compared to the permit condition 2024

|                        | Annual average compared to the permit condition 2024 | Permit condition, annual average |
|------------------------|--|----------------------------------|
| COD, t/d               | 35   | 45                               |
| BOD <sub>7</sub> , t/d | 0.6  |                                  |
| Nitrogen, kg/d         | 196  | 500                              |
| Phosphorus, kg/d       | 20   | 45                               |
| AOX, t/d               | 0.18   | 0.45                             |
| Solids, t/d            | 2.6  | 4                                |

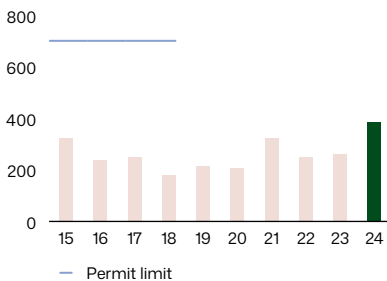
Biological oxygen demand, BOD<sub>7</sub>

t/d



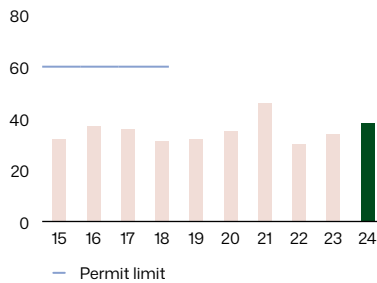
Nitrogen, N

kg/d



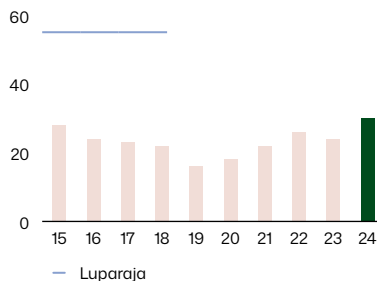
Chemical oxygen demand, COD

t/d



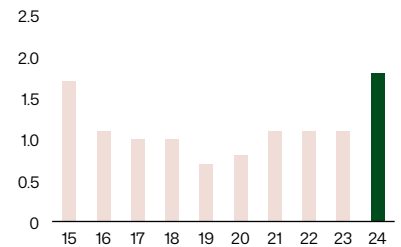
Phosphorus, P

kg/d



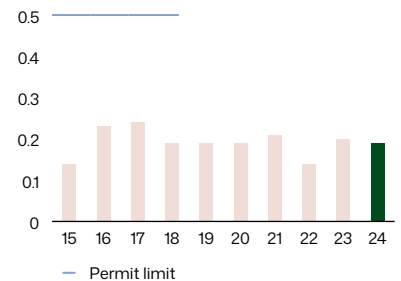
Total suspended solids, TSS

t/d



Adsorbable organic halides, AOX

kg/d



# Waste and side products

During the year, 43% of the waste generated by the pulp mill and sawmill was transferred to intermediate storage or directly recovered. A total of 6,732 tons of waste from the pulp mill and sawmill was sent to the on-site landfill, of which 94% was green liquor dregs. The amount of landfill waste per ton of pulp produced decreased by 5% compared to 2015.

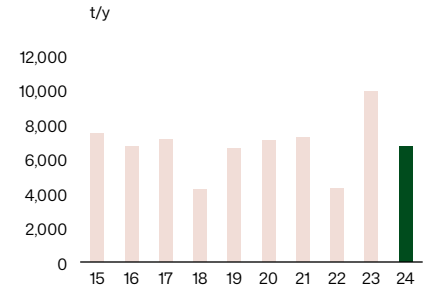
UPM's Finnish pulp mills are working together to utilize green liquor dregs. In Pietarsaari, green liquor dregs is already used as a desulphurization lime at the Alholmens Kraft power plant. However, due to the decline in peat burning, there has not been a corresponding demand for green liquor

dregs. The ash from the lime kiln and the lime removed from it are used in agriculture and water treatment. The residues from cleaning up the timber yards on the mill site are used as soil improver.

### Production residues

Tall oil and turpentine from the pulp mill production are also important side products for the mill. Among other things, pine oil is used to make biofuel, and turpentine is used as a fuel in the chemical industry. An objective related to the circular economy is that all sidestreams are utilized and process waste is not taken to the landfill after 2030.

Landfill waste, dry weight



| Solid waste 2024 (dry weight, t/year)                                 |          |                    |              |
|---|----------|--------------------|--------------|
|   | Landfill | To interim storage | Reused waste |
| Green liquor dregs  | 6,311    |                    |              |
| Lime  |          |                    |              |
| Wood and bark waste, soil constituents and timber yard cleaning waste |          | 2,144              | 1,003        |
| Cable and metal scrap   |          |                    | 644          |
| Wood-based construction and demolition waste                          |          |                    |              |
| Construction waste  | 394      | 2,513              | 64           |
| Sewage cleaning waste   | 26       |                    |              |
| Incineration without energy recovery                                  | 26       |                    |              |
| Other waste in interim storage  |          | 6                  |              |
| Other recycled waste  |          |                    | 394          |
| Total solid waste in 2024   | 6,731    | 4,663              | 2,105        |
| Total solid waste in 2023   | 9,888    | 2,146              | 2,429        |

| Side products 2024 (dry weight, t/year) |              |
|---|--------------|
|   | Reused waste |
| Lime and lime sludge                    | 888          |
| Green liquor dregs                      | 223          |
| Total by-products in 2024               | 1,111        |



# Management of crises and exceptional situations

Precisely defined internal instructions are followed in the management and communications of crises and exceptional situations. The following events are considered emergency and crisis situations at UPM 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 production disruptions
- (sabotage, demonstrations, occupational

health and safety risks, UPM's reputational risks etc.)

- external threatening situations, such as threats from another industrial facility

Among others, operational management includes the controlled shutdown of production and measures required to gain control of the exceptional situation. Investigation of the incident and the flow of information proceed in accordance with the organization'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 at the site will operate according to their own guidelines; however, all alerts will be reported to the emergency response center. Crises and exceptional situations are regularly practised, 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

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.

## Added value for the Pietarsaari area

We create significant economic wealth for the Pietarsaari area. We are a major generator of tax revenue. The property taxes paid and the municipal share of corporate income taxes support the local economy. In addition, the taxes and social security contributions that UPM employees pay on 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. Our tax impact in the Pietarsaari area was about 7 million euros.

We use nearly 5 million cubic meters of wood in our mills, most of which is sourced locally. In addition to forest owners, this provides work and a livelihood for tree harvester and timber truck drivers, loggers and other forestry professionals.

UPM is a major private employer in Pietarsaari. UPM's operations directly employed 345 people.

## Local collaboration in many forms

UPM is involved in many causes and community projects supporting sustainable development and the prosperity and welfare of the communities in which we are active. Our work on this area is clearly connected to our strategy and sustainability targets. It is coordinated under the umbrella of our Share and Care programme. The Share and Care programme comprises three forms of sup-

port: sponsorships, donations and employee volunteering. Our focus is on activities that are relevant to our business, support innovation and sustainability, or promote local vitality and wellbeing. The three focus areas of the Share and Care program are Reading & Learning, Local Engagement and Beyond Fossils projects. From 2025 onwards, the focus of the program will be on young people, education, climate and biodiversity.



In 2024, our sponsorship was mainly focused on supporting learning, sports and physical activities among children and young people in the Pietarsaari area. We worked with many local associations and clubs. Among others, we sponsored the UPM Wisamatte maths competition for sixth- and ninth-grade pupils in the Pietarsaari region. In the autumn, we organized an excursion to the forest for sixth-grade pupils in cooperation with the Finnish Forestry Association. The aim of the forest excursion was to provide pupils with a positive forest experience and increase knowledge of the use forests. We also contributed to the vitality of cultural life and local well-being in the area by spon-

soring the Rusk Chamber Music Festival and the Schauman – From pharmacy to paper exhibition at Pietarsaari Museum and building a terrace in the Pietarsaari market square with the City of Pietarsaari.

## Focus on safety and well-being

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.

In 2024, there was one lost-time accident at the sawmill in UPM Pietarsaari. The annual maintenance shutdown of the pulp mill took place without accidents. Proactive safety work was actively carried out at both the pulp mill and the sawmill: a total of 2,127 safety rounds and discussions were recorded, as well as 1,564 safety observations and incident reports.

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.

During 2024, approx. EUR 144,000 was spent on personnel well-being. The Schauman Sportsmen and Sportswomen Association (SI-SU) organized sports and wellbeing activities for our employees. In addition, employees can use their Epassi balance for various sports, cultural and well-being services worth EUR 250.



# 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.

|   |   | 2022  | 2023                      | 2024                      |
|---|---|---|---------------------------|---------------------------|
| <b>Production capacity</b>  | Sawn timber   | 280,000 m <sup>3</sup>  | 280,000 m <sup>3</sup>    | 280,000 m <sup>3</sup>    |
|   | Pulp  | 800,000 Adt   | 800,000 Adt               | 800,000 Adt               |
| <b>Raw materials</b>  | Timber<br>Cooking and bleaching chemicals<br>Others                               | See the Corporate Environmental and Societal Responsibility Statement |                           |                           |
| <b>Energy</b>   | Biomass-based fuels   | 98.3%   | 98.5%                     | 98.9%                     |
|   | Fossil fuels  | 1.7%  | 1.5%                      | 1.1%                      |
|   | Purchased energy  | See the Corporate Environmental and Societal Responsibility Statement |                           |                           |
| <b>Emissions to air</b>   | Particles   | 45 t  | 72 t                      | 86 t                      |
|   | Sulfur dioxide, SO <sub>2</sub>   | 148 t   | 220 t                     | 190 t                     |
|   | Odorous sulfur compounds, TRS (S)   | 31 t  | 21 t                      | 22 t                      |
|   | Nitrogen oxides, NO <sub>x</sub>  | 561 t   | 924 t                     | 892 t                     |
|   | Carbon dioxide, CO <sub>2</sub> (on-site fossil emissions, scope 1)               | 15,122 t  | 21,502 t                  | 16,211 t                  |
|   | Carbon dioxide, CO <sub>2</sub> (fossil emissions from purchased energy, scope 2) | 84,017 t  | 48,162 t                  | 39,122 t                  |
| <b>Water intake</b>   | Process and cooling water   | 46,906,673 m <sup>3</sup>   | 66,073,031 m <sup>3</sup> | 69,140,156 m <sup>3</sup> |
| <b>Discharges to water</b>  | Cooling and rain water  | 24,757,376 m <sup>3</sup>   | 37,297,483 m <sup>3</sup> | 42,108,819 m <sup>3</sup> |
|   | Treated wastewater  | 22,114,297 m <sup>3</sup>   | 28,740,543 m <sup>3</sup> | 26,996,334 m <sup>3</sup> |
|   | Biological oxygen demand, BOD <sub>7</sub>  | 140 t   | 118 t                     | 205 t                     |
|   | Chemical oxygen demand, COD <sub>Cr</sub>   | 10,114 t  | 12,783 t                  | 14,156 t                  |
|   | Total suspended solids, TSS   | 186 t   | 174 t                     | 551 t                     |
|   | Total phosphorus, P <sub>tot</sub>  | 9 t   | 7 t                       | 7 t                       |
|   | Total nitrogen, N <sub>tot</sub>  | 63 t  | 62 t                      | 65 t                      |
|   | Adsorbable organic halides, AOX   | 44 t  | 70 t                      | 64 t                      |
| <b>Side products</b>  | Lime sludge   | 4,138 t   | 1,444 t                   | 888 t                     |
|   | Green liquor dregs  | 384 t   | 243 t                     | 223 t                     |
|   | Total   | 4,522 t   | 1,687 t                   | 1,111 t                   |
| <b>Waste</b>  | Solid waste to landfill <sup>1)</sup>   |   |                           |                           |
|   | - Green liquor dregs  | 4,177 t   | 9,774 t                   | 6,311 t                   |
|   | - Construction waste  | 107 t   | 114 t                     | 394 t                     |
|   | - Other waste and incineration without energy recovery                            |   |                           | 52 t                      |
|   | - Total   |   | 9,888 t                   | 6,731 t                   |
|   | Recyclable waste  |   |                           |                           |
|   | - Metal waste   | 802 t   | 709 t                     | 644 t                     |
|   | - Wood and bark waste, soil constituents and timber yard cleaning waste           | 529 t   | 339 t                     | 1,003 t                   |
|   | - Construction waste  | 270 t   | 333 t                     | 64 t                      |
|   | - Green liquor dregs  | -   | 404 t                     | 0 t                       |
|   | - Other recycled waste (incl. energy waste)                                       | 186 t   | 644 t                     | 394 t                     |
|   | - Total   | 1,787 t   | 2,429 t                   | 2,105 t                   |
|   | Temporarily stored waste intended for reuse                                       |   |                           |                           |
|   | - Branch rejects  |   |                           |                           |
|   | - Lime  |   |                           |                           |
| - Metal waste   | 76 t  | 522 t   | 2,513 t                   |                           |
| - Construction waste  | 894 t   | 1,532 t   | 2,144 t                   |                           |
| - Soil constituents and timber yard cleaning, wood and bark waste | 277 t   | 92 t  | 6 t                       |                           |
| - Other interim storage waste                                     | 1,247 t   | 2,146 t   | 4,663 t                   |                           |
| - Total   |   |   |                           |                           |
| <b>Hazardous waste <sup>2)</sup></b>                              |   | 136.57 t  | 304.08 t                  |                           |
| <b>Land use</b>   | Total use of land   | 210 ha  | 210 ha                    | 210 ha                    |
|   | Total sealed area   | 200 ha  | 200 ha                    | 200 ha                    |
|   | Total nature-oriented area on site  | 10 ha   | 10 ha                     | 10 ha                     |
|   | Total nature-oriented area off-site   | 5 ha  | 5 ha                      | 5 ha                      |

<sup>1)</sup> Dry weight

<sup>2)</sup> Hazardous waste stated as total weight



# Performance against targets in 2024

| Target  | Achieved | Comment  |
|---|----------|--|
| <b>Pulp mill</b> Clean Run environmental irregularity observations' class 3-5 deviations: 0       | Yes      | In 2024, there were no emissions exceeding the permit limits   |
| Solid waste to landfill < 5.1 kg/t of pulp  | No       | No permanent use has yet been found for green liquor sludge. Several studies are still ongoing.                          |
| Testing of recycled nutrients as an additional nutrient source for the wastewater treatment plant | No       | A cost-competitive recycled nutrient has not yet been found. The study is ongoing.                                       |
| Process water consumption < 35.4 m <sup>3</sup> /t of pulp  | No       | The target was met in eight months during the reference period, but the average for the whole year was above the target. |
| COD emissions from treated process water < 15.7 kg/t of pulp and < 45 t/d                         | No       | The target was exceeded during the reference period, but the average emission for the year was below the target.         |
| AOX emission from treated process water < 0.12 kg/t of pulp and < 0.45 t/d                        | Yes      | Specific emissions and average emissions for the whole year were below the target during the reference period.           |
| Phosphorus emissions from treated process water < 16.1 kg/t of pulp and < 45 kg/d                 | Yes      | The average emissions for the whole year were below the target.  |
| Nitrogen emissions from treated process water < 500 kg/d  | Yes      | The average emissions for the whole year were below the target.  |
| Solids emission from treated process water < 4 t/d  | Yes      | The average emissions for the whole year were below the target.  |
| Specific emission of acidifying flue gas < 1.38 kg/t of pulp                                      | Yes      | The average specific emissions for the whole year were below the target.   |
| Specific emissions of fossil carbon dioxide < 3 kg/t of pulp                                      | No       | Due to production disruptions, fossil fuels had to be used at times during the year.                                     |
| Recovery boiler's NO <sub>x</sub> emissions < 250 mg/m <sup>3</sup> (n)                           | Yes      | The average emissions for the whole year were below the target.  |
| Recovery boiler's SO <sub>2</sub> emissions < 40 mg/m <sup>3</sup> (n)                            | Yes      | The average emissions for the whole year were below the target.  |
| Recovery boiler's TRS emissions < 8 mg/m <sup>3</sup> (n)   | Yes      | The average emissions for the whole year were below the target.  |
| Recovery boiler's particulate emissions < 40 mg/m <sup>3</sup> (n)                                | Yes      | The average emissions for the whole year were below the target.  |
| Lime kiln's NO <sub>x</sub> emissions < 400 mg/m <sup>3</sup> (n)                                 | Yes      | The average emissions for the whole year were below the target.  |
| Lime kiln's SO <sub>2</sub> -emissions < 160 mg/m <sup>3</sup> (n)                                | Yes      | The average emissions for the whole year were below the target.  |
| Lime kiln's TRS emission < 16 mg/m <sup>3</sup> (n)   | Yes      | The average emissions for the whole year were below the target.  |
| Lime kiln's particulate emissions < 45 mg/m <sup>3</sup> (n)                                      | Yes      | The average emissions for the whole year were below the target.  |
| <b>Alholma sawmill</b> Improving energy efficiency by 1%: 2024 target 0.332 Mwh/m <sup>3</sup>    | Yes      | Achieved rate 0.315%   |
| Clean Run environmental irregularity observations' class 3-5 deviations: 0                        | Yes      | 0  |
| At least 30 environmental observations in 2024  | Yes      | A total of 34 environmental observations were made in 2024   |
| Environmental rounds, at least 2 per month in 2024  | Yes      | A total of 38 environmental rounds were made in 2024   |
| The amount of waste going to incineration in 2024 was reduced by approx. 0.106 kg/m <sup>3</sup>  | Yes      |  |

## Targets for 2025

| Target  |
|---|
| <b>Pulp mill</b>  |
| Clean Run environmental irregularity observations' class 3-5 deviations: 0                        |
| Solid waste to landfill < 4.2 kg/t of pulp  |
| Testing of recycled nutrients as an additional nutrient source for the wastewater treatment plant |
| Process water consumption < 35.3 m <sup>3</sup> /t of pulp  |
| COD emissions from treated process water < 15.3 kg/t of pulp and < 45 t/d                         |
| AOX emission from treated process water < 0.12 kg/t of pulp and < 0.45 t/d                        |
| Phosphorus emissions from treated process water < 15.5 kg/ton pulp and < 45 kg/d                  |
| Nitrogen emissions from treated process water < 500 kg/d  |
| Solids emission from treated process water < 4 t/d  |
| Specific emissions of acidifying flue gas < 1.35 kg/t of pulp                                     |
| Specific emissions of fossil carbon dioxide < 11 kg/t of pulp                                     |
| Recovery boiler's NO <sub>x</sub> emissions < 250 mg/m <sup>3</sup> (n)                           |
| Recovery boiler's SO <sub>2</sub> emissions < 40 mg/m <sup>3</sup> (n)                            |
| Recovery boiler's TRS emissions < 8 mg/m <sup>3</sup> (n)   |
| Recovery boiler's particulate emissions < 40 mg/m <sup>3</sup> (n)                                |
| Lime kiln's NO <sub>x</sub> emissions < 400 mg/m <sup>3</sup> (n)                                 |
| Lime kiln's SO <sub>2</sub> emissions < 160 mg/m <sup>3</sup> (n)                                 |
| Lime kiln's TRS emissions < 16 mg/m <sup>3</sup> (n)  |
| Lime kiln's particulate emissions < 45 mg/m <sup>3</sup> (n)                                      |
| <b>Alholma sawmill</b>  |
| Improving energy efficiency by 1%: 2025 target 0.316 Mwh/m <sup>3</sup>                           |
| Clean Run environmental irregularity observations' class 3-5 deviations: 0                        |
| At least 20 environmental observations  |
| At least 20 environmental rounds  |
| Reducing waste going to incineration in 2025, target 0.090 kg/m <sup>3</sup>                      |
| Deployment of a cardboard press and recycling from departments                                    |



### Validation statement

As an accredited environmental verifier (FI-V-0001), Kiwa Sertifiointi Oy has examined the environmental management system and UPM Pietarsaari Environmental and Societal Responsibility 2024 statement as well as the information concerning UPM Pietarsaari in the UPM Corporate Environmental and Societal Responsibility Statement 2024.

On the basis of this examination, the environmental verifier has herewith confirmed on 2025-04-11 that the environmental management system, the Finnish UPM Pietarsaari Environmental and Societal Responsibility 2024 statement and the information concerning UPM Pietarsaari in the Finnish UPM Corporate Environmental and Societal Responsibility Statement 2024 are in compliance with the requirements of the EMAS Regulation (EC) No 1221/2009.



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