



UPM Caledonian



Environmental and societal responsibility 2024

UPM Caledonian

UPM's Caledonian mill is situated in Irvine on the West Coast of Scotland approx. 50 kilometres southwest of Glasgow. In production since April 1989 the Caledonian mill is capable of producing 235,000 tonnes of lightweight coated paper (LWC) for printing magazines, catalogues, brochures. The mill has a Biomass Combined Heat and Power (CHP) plant, a single paper machine line, a debarking plant, a pressurised groundwood (PGW) mechanical pulp mill and a primary effluent treatment plant. Effluent is then treated further in the neighbouring Municipal Waste Water Treatment Plant operated by a third party.

Environmental issues are an integral part of everyday operations. Targets are set as part of our annual business planning process with our key environmental aspects and impacts identified through our regulatory and business requirements to demonstrate continuous improvement. These are followed closely throughout the year. Our objective is to produce attractive and competitive paper with the lowest possible overall environmental impact. Through open communication we actively provide our customers, employees, environmental authorities, as well as our local community with information on environmental issues and knowledge of the mills operations.



Production capacity	235,000 tonnes of paper
Personnel	278
Products	Coated Magazine Papers: UPM Cote H UPM Cote Blueshade H UPM Cote Ivory H UPM Cote SB (customer specific) H UPM Ultra H UPM Ultra Silk H UPM Ultra Silk Extra H UPM Ultra Matt H
Certificates	ISO 9001 - Quality Management System ISO 14001 - Environmental 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 (available at www.upm.com/responsibility)
Environmental labels	EU Ecolabel



UPM Caledonian 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) and provides millspecific environmental and societal performance data and trends for the year 2024.

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

Review of year 2024

In accordance with Pollution Prevention and Control (Scotland) regulations Caledonian Paper has an integrated management system in effect covering environment, quality and occupational health and safety to ensure compliance with all permit conditions and applicable legislation.

This Report gives information on the Mill's performance and covers the most significant environmental impacts – emissions to Air and Water; Waste and Material consumption.

Paper production was at a lower level in 2024 in comparison with previous years as a direct consequence of a reduction in graphic paper demand globally. Although the additional downtime can be effectively utilised for maintenance the overall specific efficiencies are impacted as essential utilities are still required during these downtime periods.

As an integral part of the manufacturing process Caledonian operates a biomass fuelled combined heat and power plant (CHP) which supplies all of the sites current steam demand and meets a proportion of the electrical demand. The CHP plant is fuelled 100% by biomass from virgin and recycled sources with all fuels sourced locally. We continue to work closely with our biomass suppliers to ensure a consistent fuel quality with the added benefit of reducing the waste ashes from the combustion process and a reduction in key emissions to air. Site visits are carried out at the supplier depots to continually educate our suppliers on how fuel quality can influence the operation of the boiler. The CHP boiler had its annual maintenance shut in April 2024 with a delayed start up due to a failure in upgrading the control system software. The consequence of this was that the auxiliary boiler was brought online to supplement the paper machine start up and resulted in increased natural gas use in May 2024.

Environmental Performance

UPM Caledonian operates within the boundaries of an Integrated Pollution Prevention and Control (PPC) Permit. The conditions of this permit are transposed from the European Industrial Emissions Directive with reference to the current Pulp and Paper BREF document. There were no breaches with regards any of our permit conditions in 2024.

An independent environmental noise survey was conducted in 2024 which involved taking noise measurements during both weekday and night operations. Noise sensitive locations were determined both on and offsite to assess what impact the plant may have in the local community. The conclusion from the report is that conservative Caledonian Paper Mill operations on

a day and night do not present an adverse impact on the noise levels at the surrounding residential receptors and there was no perceptible vibration arising at the site boundary due to the site operations.

Reporting to SEPA is required on a quarterly basis for a variety of parameters including emissions to air, effluent and waste. On an annual basis we are required to report the mass of all emissions under the Pollutant release and Transfer Register. For air emissions there was a decrease in the sulphur dioxide (SO₂) of 32% which is most probably attributed to higher proportions of fuelwood and sawmill chips as these typically produce lower emissions than other chipped fuels. There was a slight increase in both nitrogen oxides (NO_x) and chlorine compounds (HCl) of 22% and 13% respectively, however the boiler operating hours was at a lower level in 2023.

The site has worked well with the biomass suppliers to ensure the ash generated during combustion is kept at low levels. There have been very slight reductions in ash volumes year on year, however we may see that ash volumes have now reached a plateau. The end routes for all waste streams are well established with all our process wastes now being recovered or recycled. The flyash is recycled either via separation and carbonation for the cement industry or for land reclamation by consolidating with other hazardous wastes.



Bryan McMurdo
General Manager

Flue2Chem

UPM Caledonian Paper has participated in the carbon capture and utilisation project Flue2Chem. Flue2Chem is a consortium of sixteen organisations, evaluating the full end to end business and environmental impacts of converting emissions from foundation industries (such as metal, glass, paper and chemicals) to more sustainable consumer products. These carbon dioxide (CO₂) emissions would traditionally be emitted to the atmosphere, but if captured, they can have a valuable second life as a raw material. The project aims to demonstrate how carbon dioxide emissions can be re-used and ultimately reduce the need to extract more oil and gas to make consumer products.

The carbon capture unit arrived at the Caledonian site in October 2024 after a successful deployment earlier in 2024 at another paper manufacturing site. Maintenance was carried out on the unit at our site during Q4 and was brought online in January 2025, capturing CO₂ from the flue gases of the CHP boiler. This project will continue until the end of March 2025.

Energy Efficiency

Caledonian installed 3 turbo blowers into the PM vacuum system as a replacement for the liquid ring vacuum pumps in November 2023 which has achieved significant energy savings. Continued optimization of the turbo blowers is ongoing to realise additional energy savings.



Sharon Gallagher
Environment & Compliance Manager

Our environmental permit was varied for the installation with some additional environmental monitoring required for both noise and volatile organic carbon (VOC's) emissions. Both an environmental noise survey and testing for VOCs were carried during 2024.

Occupational Health and Safety

At Caledonian, we strive to reduce and eliminate accidents and ill health through effective risk management and by looking for ways to continuously improve. We expect everyone to take responsibility for safety by their actions and through their attitude to help create and maintain a safe work environment.

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 our 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.

Compliance with site procedures and leading by good example helps develop and sustain our safety culture. We assess and mitigate health and safety risks in our operations and continuously develop safer ways of working. All employees are encouraged to raise safety observations when they identify potential safety issues. A target average of 2 safety observations per person was set and we managed to meet and exceed this target by over 70% for this. Also impressive was the performance for the level of safety walks completed at 114%. The purpose of safety walks is to have a systematic process in place to follow the implementation of safety rules and guidelines, ensuring their compliance and to find and share good practices. They often require observing a task being carried out at close proximity and a follow up discussion with those involved.

In UPM, there has been a progression in the way we evaluate our safety performance. Historically, safety was measured by the operations performance in term of Lost Time Accidents and the focus was on employees only. In recent years UPM also set a much wider criteria for "Recordable" Incidents and we now follow the frequency of these (TRIF). TRIF considers all incidents where there is a need for medical treatment or where the injury prevents a worker from resuming normal duties. The scope of TRIF has also been widened to include the contractors now working on site. This is a significant development in accepting greater ownership for safety in the totality of site operations. Furthermore, there have been important developments in the way that that UPM has created its new Safety Vision and refined its core Safety Principles.

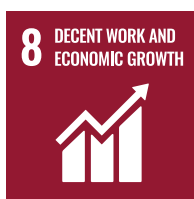
UPM's new Safety Vision is "We choose Safety. Always" and the renewed Safety Principles are:

- Safety First
- Safety Starts with Me
- Safety is created together

Absence performance for 2024 dropped to 3.5% from the 2023 level of 3.64%. The focus on the health and well being of our employees continues with campaigns focused on mental health, menopause nutrition and general fitness throughout 2024.

UPM Caledonian

Contribution to UN Sustainable Development Goals in 2024



Safety

917

safety observations and incidents reported by employees, visitors and contractors of which

64

included an environmental element

273

Safety walks in 2024

91

Toolbox talks



Energy

74%

of all electricity consumed in 2024 was generated onsite using renewable sources via the CHP biomass fueled boiler.

100%

of all steam is utilised onsite for the papermaking process.



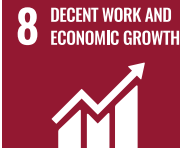
Air

32%

reduction in Sulphur Oxides Emissions to air (2023 vs 2024)

24%

reduction in Total Particulate Matter emissions to air over last 10 years (2014 vs 2024)

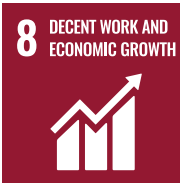


Employment

Caledonian employed

278
People

Total persons at Caledonian Paper



Qualified Spend

78%

Of raw materials spend excluding wood qualified against UPM Supplier and Third Party Code.

UPM's target is to have 100% of raw material spend covered by UPM Supplier and Third Party Code by 2030. In 2023 98 % of raw material spend was covered by UPM Supplier and Third-Party Code.



Certified fibre

97%

of fibre used in paper production at Caledonian was FSC and /or PEFC certified. UPM's target is to have all fibre certified by 2030.

111,929 tons

of LWC sold under PEFC or FSC certification scheme in 2024

UPM is committed to sustainable forest management and credible certification systems, FSC and PEFC. Forest certificates guarantee that the wood raw material comes from the sustainably managed forests with legal logging operations.



Water

3,234,011m³

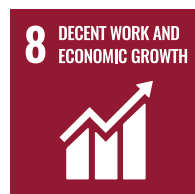
in fresh water consumption (6% reduction 2022 vs 2024)

29%

reduction in effluent COD tons over last 10 years (2014 vs 2024)

29%

reduction in BOD over last 10 years (2014 vs 2024)



Community

Through the Caledonian Employee Charity Fund, local charities have benefitted from

£9,000

as charitable donations from employees and UPM was donated in 2024.

Air



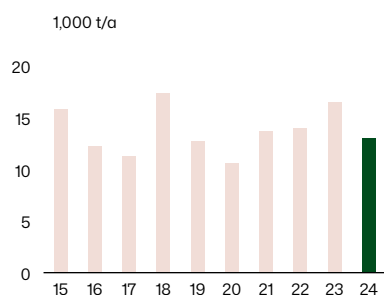
The CHP boiler had an 89% operating rate in 2024 in comparison of 84% in 2023 with the turbine providing 74% of the sites electricity requirements with all emissions to air compliant with permit requirements. There were no clean run deviations above category 3 that required reporting to the environmental authorities.

Over the last 10 years air emissions have not increased significantly and for a few parameters we have seen some significant decreases. For the last few years total particulate emissions have been at very low levels and have been steady at a level of 2.5 tons per annum. Sulphur dioxide emissions were at their lowest level in 2024, some of which can be attributed to working closely with the

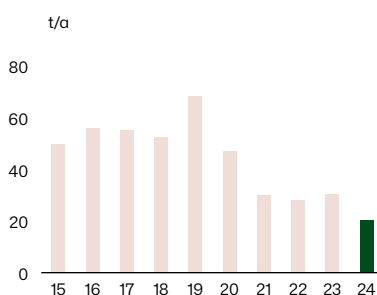
suppliers of biomass to ensue the contaminants in the feedstocks are minimised and are homogenous.

Fossil carbon dioxide emissions are typically below 15,000 tons per annum for the Caledonian site with 13,026 tons in 2024. Caledonian Paper complies with the reporting requirements of UK ETS whereby the monitoring, measuring and reporting of CO₂ emissions undergoes third party audit and verification before being submitted to the environmental authorities. The largest contributor of fossil CO₂ is the use of natural gas at the coating machine used to dry the coating. In 2025 we will focus on the reduction of natural gas at the coater through modification of the drying techniques.

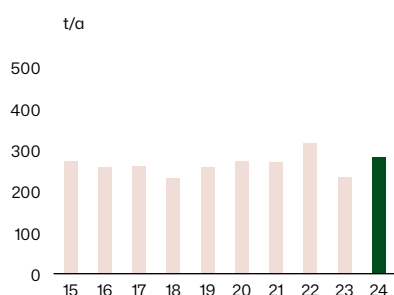
Fossil carbon dioxide, CO₂ (scope 1)



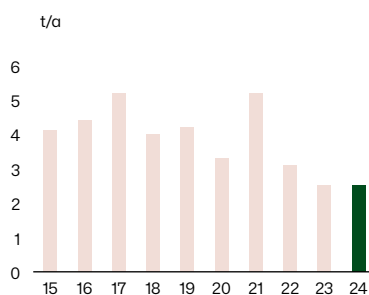
Sulphur dioxide, SO₂



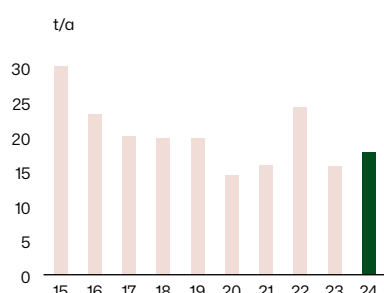
Nitrogen oxides, NOX



Particulates



Chlorides, HCl



t/a refers to tonnes per annum

Waste

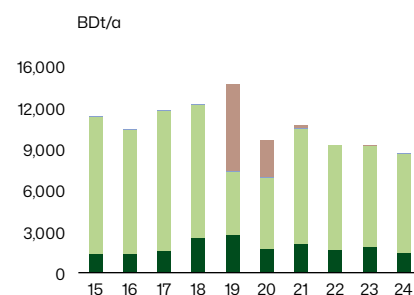


Caledonian utilises one contractor for the majority of the sites waste and two contractors for all flyash. All waste from site during 2024 was recycled, reused or provided energy from waste. Since 2019 the flyash routes have been either in the cement process for mine stabilisation or in the manufacture of cement blocks.

Year on year we are achieving reduced volumes of waste leaving site.

A full waste review will be carried out in 2025 in compliance with permit conditions.

Solid waste



- Ash (Landfill)
- Hazardous
- Ash (Recycled)
- Recycled/Recovered

All waste volumes based on dry tonnes

Water

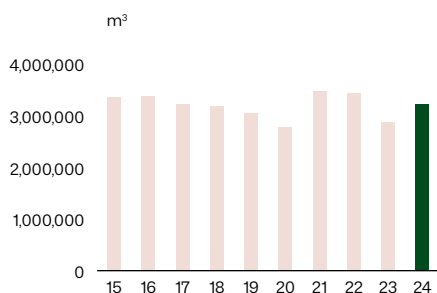


All water used onsite is municipal mains potable water. The water used in the papermaking process undergoes several recycling routes before being discharged to the effluent system. Caledonian has a primary effluent treatment plant for solids removal which is then combusted in the CHP boiler with the excess water effluent being discharged to the municipal secondary effluent treatment plant for further processing. The agreement between Caledonian and the operator of the municipal secondary treatment plant has limits on several parameters with the treatment provider sampling and analysing the key parameters on a daily basis.

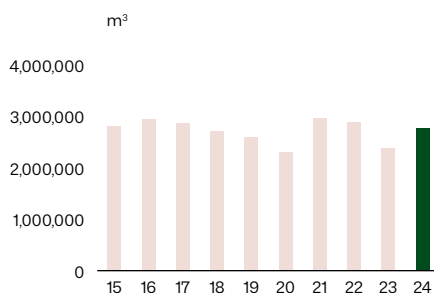
With a lower production rate in 2024 it was difficult to achieve specific water savings per tonne of product when taking the whole year into consideration. We saw an increased use of water in 2024 as during the additional periods of scheduled downtime there is a requirement to clean out our tanks and systems to prevent bacterial growth in the process. Water savings will be an area of focus in 2025.

2024 water emissions fulfills the BAT requirements in accordance with the Pulp and Paper BREF (2015).

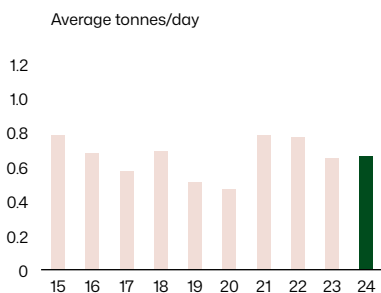
Freshwater Consumption



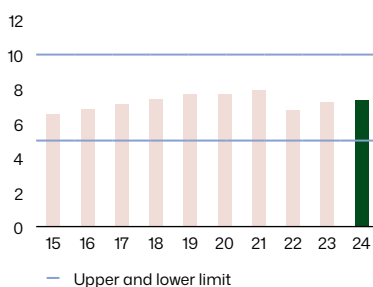
Effluent Volume



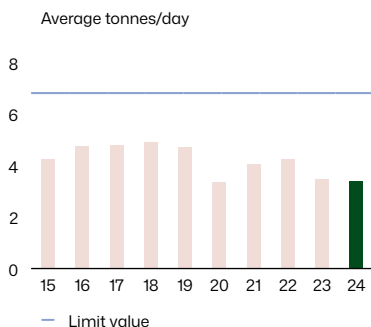
Total suspended solids, TSS



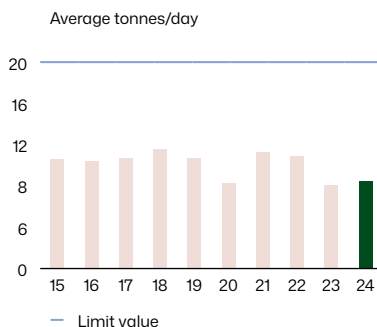
Effluent pH



Biological oxygen demand, BOD₅



Chemical oxygen demand, COD



Energy Efficiency

Mechanical Pulp used in the LWC product manufactured at Caledonian is produced by the Pressure Groundwood (PGW) process. This process area is the single biggest electrical consumer in the Mill and saving electrical energy when producing PGW pulp is a clear focus area. Since 2021 we have installed a new type of grinding surface in three out of the our Pressure Groundwood (PGW) grinders. Further optimization within the reject refining area took place in 2024 as a consequence of the new grinding surface. A fourth energy efficient surface will be installed in 2025 with the potential for further energy savings.

The installation of the turbo blowers as a replacement to the liquid ring pumps on the PM vacuum system in November 2023 underwent some further optimisation in 2024 which will continue into 2025 to further enhance the energy efficiency savings.

Energy efficiency targets will be monitored through the reporting requirements of the government scheme of ESOS (energy Savings and Opportunities Scheme).

Customer Visits

We have had a number of customer visitors to the mill during 2024, with a mix of printers, publishers and merchants, from the UK, and abroad. McCann, PG paper, Antalis, Gould UK, Springer nature magazines to name a few from the UK market, as well as Lindenmeyr INC from the USA.

The visits were a mix of UPM group promotion, training in paper production, and Caledonian specific production of paper, and specifically how we impact the outside world.

The interest is in forestry practices, chemical sourcing, the future impact of EUDR and other accreditations

Organisational Structure and Emergency Organisation

Caledonian has systems in place for emergency preparedness and response which includes both environmental and OHS incidents. Operational procedures have been established which take into account both normal and abnormal situations which may arise throughout the organisation

and addresses the requirements to control, minimise and prevent any negative impacts. These procedures are available to all personnel within the Quality First database.

We have an established emergency response team (ERT) on each shift who are multi skilled and trained to assess and con-

tain a variety of incidents. If the situation or incident can be managed by the team itself then they shall do so with retrospective contact being made with the relevant authorities and agencies. Further details of the ERT responsibilities are detailed on pages 8 and 9.

Societal responsibility

2024 was a special year for UPM Caledonian as we celebrated our 35th anniversary of producing paper! We held an Open Day for family and friends of staff including a mill tour and lots of coffee and cake.

Engaging with Society Caledonian Charity Fund

The Caledonian Paper Charity Fund was established in 1995 with the ultimate aim of providing charitable donations to local groups to enhance the quality of life. Employees contribute a donation from their salary on a monthly basis with UPM Caledonian matching these contributions.

Staff have the opportunity to donate money from their monthly salary which is collected throughout the year and used for nominated charities. Annually all the nominations are considered and the committee will agree which charities will receive a donation from the fund.

In 2024 the following charities were chosen to receive a donation of £1000 each:

- Stride Group Ardrossan (Sense Scotland)
- Ayrshire Hospice
- Bonnyton Thistle Flyers (Disability Football)
- Cerebral Palsy Scotland
- Crosshouse Children's Fund
- RNLI Ayrshire
- The Lennox Partnership, North Ayrshire
- Irvine Newton Mens'Shed

Employee Involvement

In March we had Wellington Secondary School visit the mill to learn all about papermaking. Linda Munn, Head of Business Studies said: "The visit was extremely interesting and informative and covered a lot of the issues we discuss in class. The pupils really enjoyed the visit and they commented on how they can now understand how the theo-

ry they learn is applied in a real-life working environment."

We had several visits to local schools to give children an insight into sustainable papermaking.

In July staff took part in Climate Quest Challenge which ran from 6th May until 16th June, with all UPM Business areas taking part. Caledonian Paper came 7th overall which is an excellent achievement. Communication Papers as a Business Function was second with Plywood winning overall. 630 people joined the challenge with 25 teams taking part. During the six-week challenge, participants made their online journey to 9 UPM locations on the map by tracking steps, exercising, cheering on colleagues and completing climate-related micro actions using an app. Caledonian featured as one of the pit stops.

In September we hosted our Annual Coffee Morning in aid of MacMillan Cancer Support, we raised £607 in total.





Health and Well Being

In February the Quarterly Health and Well-being Campaign focused on healthy eating. This included a 35 minute fitness workout challenge and delivery of fresh fruit for all staff to enjoy, we also had even more healthy options on offer in our on site canteen for Healthy Options Week.

Mental Health Week in May launched with a visit from Breathing Space, TheTh-reeSixty and VASA (Voluntary Action South Ayrshire) who chatted to staff informing of services in the area.

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.

Caledonian, along with other UPM units, took time at the end of 2024 to gather small groups of employees and discuss this safety vision and also to assess where these groups thought the site was positioned in relation to a number of key safety objectives. The

feedback was then given to Caledonian's management team so that the business plan for 2025 could take account of this.

The third Safety Principle, "Safety is created together", is a new one. This marks a further shift in emphasis to create a culture of sharing, learning, and improving. In practice this means developing and sharing examples of good practice in safety with other UPM units, and copying the good practice we see in these other units. Our Safety performance is therefore becoming more focused on achieving targets for these leading safety indicators than on the traditional, accident based, lagging indicators.

Emergency Response Team (ERT) :

Caledonian has an Emergency Response Team (ERT) for each shift consisting of 7 persons each. The main purpose of this team is to respond to incidents safely and efficiently, to stabilise any causality or plant abnormality until suitable professional help arrives (if required). This team undergo dedicated training, including external first aid training.

In 2024 the ERT training scenarios included:

- Firefighting (simulation) at various locations;
- Confined Space rescue
- Chemical incident
- Overhead pipeline failure
- Respond to an Argon release (fire suppressant) in an electrical room
- Gas leak response and radio communications exercise

The training plans also ensure first aid skills are maintained and ensure site familiarisation is given prominence.



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
Production capacity	Paper LWC	235,000t	235,000t	235,000t
Raw materials (BDT)	Pulp Pigments Process Chemicals	See UPM Corporate Environmental and Societal Responsibility Statement for more information		
Energy	Biogenic Fuels Fossil Fuels Electricity ¹⁾	92% 8%	90% 10%	92% 8%
Emission to air	Sulphur Dioxide, SO _x Nitrous Oxides, NO _x Carbon dioxide, CO ₂ (on-site fossil emissions, scope 1) Carbon dioxide, CO ₂ (fossil emissions from purchased energy, scope 2) Particulates	28t 318t 14,031t 24,425t 3t	30t 233t 16,489t 14,599t 2.5t	21t 283t 13,026t 16,170t 2.5t
Water intake	Fresh Water	3,433,839m ³	2,884,838m ³	3,234,011 m ³
Discharges to water	Chemical Oxygen Demand (COD) Total Suspended Solids Biological Oxygen Demand (BOD ₅) Effluent Volume	3,974t 280t 1,556t 2,871,688m ³	2,954t 237t 1,256t 2,371,539m ³	3,104t 244t 1,243t 2,768,331m ³
Side Products		0t	0t	0t
Non-hazardous waste²⁾	Waste to recycling, energy recovery and or composting (See below for breakdown) – Boiler Ash – Bark & Other Wood Residues – Domestic – Waste Paper – Other – Metals Waste to Landfill (Flyash)	9,246t 7,624t 1,005t 169t 160t 139t 149t 0t	9,282t 7,376t 935t 289t 156t 145t 381t 5t	8,675t 7,211t 889t 146t 139t 115t 174t 0t
Hazardous Waste	Hazardous Waste	0t	2.2t	0.8t
Recovery Rate³⁾		98%	100%	100%
Land use	Total use of land Total sealed area on site Total nature-oriented area on site	33ha 10ha 23ha	33ha 10ha 23ha	33ha 10ha 23ha

¹⁾ For more information, see the Group's Environmental and Social Responsibility Statement (e.g. energy indicators)

²⁾ All wastes are dry weight

³⁾ Recovery rate is based on total waste



Performance against targets in 2024

Target	Achievement	Comments
1 Ensure permit compliance <ul style="list-style-type: none">with no clean run deviations category 3 or abovedevelop awareness across mill to increase environmental observations	Yes	<ul style="list-style-type: none">No category 3 breaches reported to authority in 2024Guidance to all employees on environmental observations
2 Key efficiency targets are improved or maintained and included in area plans including effluent, COD and site emissions.	Partial	Key efficiency targets are included in area plans. There were increases to most specific targets as a consequence of lower production volume in 2024.
3 Energy efficiency roadmap to be created (electricity and gas; water and effluent; compressed air)	Partial	Energy use is closely monitored and taken into account for the whole operation. Monthly analysis of statistics distributed for comment. This will be monitored through ESOS reporting requirements going forward.
4 Key safety accountability targets <ul style="list-style-type: none">Safety walks : 6 per identified personNear Miss/Observation : 2 per employee per yearSOP (safe operating instructions) reviews : 10 per production area	Partial	<ul style="list-style-type: none">273 walks carried out in 2024 Tgt was 240917 observation raised in 2024, Tgt was 53255 SOP reviews in 2024, Tgt was 50

Environmental, Societal and key OHS targets 2025

Key Areas of Focus

Target
1 Ensure permit compliance <ul style="list-style-type: none">with no clean run deviations category 3 or aboveSupport implementation of EUDR (European Deforestation Regulation)Energy roadmap for ESOS (Energy Savings and Opportunit Scheme) and ETS (Emissions Trading Scheme)
2 Key efficiency targets are improved or maintained and included in area plans including effluent volume, site emissions and COD
3 Key Safety accountability targets <ul style="list-style-type: none">SOP (Safe Operating Procedure) and RA (Risk Assessment) reviews : 10 per production areaSafety observations : 1 per employee each quarterSafety walks : 10 per identified employee
4 Focus on health and wellbeing : develop a calendar for focus areas for 2025.



Validation statement

As an accredited environmental verifier, Kiwa Sertifiointi Oy has examined the evidence of procedures and processes of the environmental management system and UPM Caledonian Environmental and Societal Responsibility 2024 statement.

On the basis of this examination, the environmental verifier has herewith confirmed on 2025-04-15 that the UPM Caledonian Environmental and Societal Responsibility 2024 statement is in compliance with UPM's internal reporting guidelines, and there is no evidence of non-compliance with applicable legal requirements relating to the environment.



upm.com

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