



UPM Nordland Papier



Environmental and societal responsibility 2024

UPM Nordland Papier

UPM Nordland Papier is based in Dörpen, Emsland in Lower Saxony. The paper mill was founded in 1967 and is now one of the world's largest paper mills.

Three paper machines and two coating machines are used to produce wood-free graphic writing and printing papers, known as fine papers. In addition, one paper machine was converted for the production of specialty papers. Pulp is used as the main raw material for paper production. Calcium carbonate is used as a filler. Kaolin is also used as a pigment for coated papers.

Process wastewater is treated at the wastewater treatment plant at the paper mill before being discharged into the River Ems. Freshwater is extracted from deep wells, taking into account the sustainable regeneration of groundwater. 100% of the electricity required is drawn from the public grid. Some of the steam required for drying the paper is generated from natural gas in the mill's own combined heat and power station.

An in-house cogeneration power plant was commissioned in 2022. The highly efficient 84 MW gas-fired power plant has improved the environmental footprint and covers a large percentage of the paper mill's heat demand while actively participating in the increasingly volatile German electricity market.



UPM Nordland Papier 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 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

Production capacity	Up to 843,000 tonnes per year	
Personnel	Approx. 1,170 employees total inc. trainees, as of December 31, 2024	
Products	Fine Papers: UPM Fine UPM Preprint UPM Office UPM Sollum UPM Finesse UPM Digi UPM Poste UPM PrePersonal	Specialty papers: UPM Brilliant™ UPM Brilliant™ Forte UPM Honey™ Plus UPM Honey™ Plus Forte UPM Honey™ Plus Recycled UPM Honey™ Plus Recycled Forte UPM Golden™ UPM Golden™ Forte UPM Golden™ Recycled Forte UPM Asendo Pro UPM Confideo Pro
Certificates	EMAS – EU Eco-Management and Audit Scheme ISO 14001 – Environmental Management System ISO 9001 – Quality Management System ISO 50001 – Energy Management System ISO 45001 – Occupational Health and Safety Management System PEFC™ Chain of Custody - Programme for the Endorsement of Forest Certification FSC® Chain of Custody – Forest Stewardship Council ISO 22000 – Food Safety Management System (for specific parts of the mill) All certificates can be found from UPM's Certificate Finder (available at www.upm.com/responsibility)	
Environmental labels	EU Ecolabel for copy and graphic paper	



For more information about FSC certification visit fsc.org



For more information about PEFC certification visit pefc.org



Review of the year 2024

OUR ENVIRONMENTAL YEAR 2024

As in 2023, 2024 was marked by a sharp decline in the markets. For this reason, starting mid-year, we began preparing to shut down our Paper Machine 3 in December 2024. An assessment of the impact on our specific emissions and our water cycles is scheduled for 2025.

Since the third quarter of 2022, our high-efficiency gas-fired power plant has been producing steam and electricity using cogeneration, with an output of 84 MW. This makes us an active player in the German electricity market and enables us to significantly improve our overall CO₂ balance compared to the previous situation.

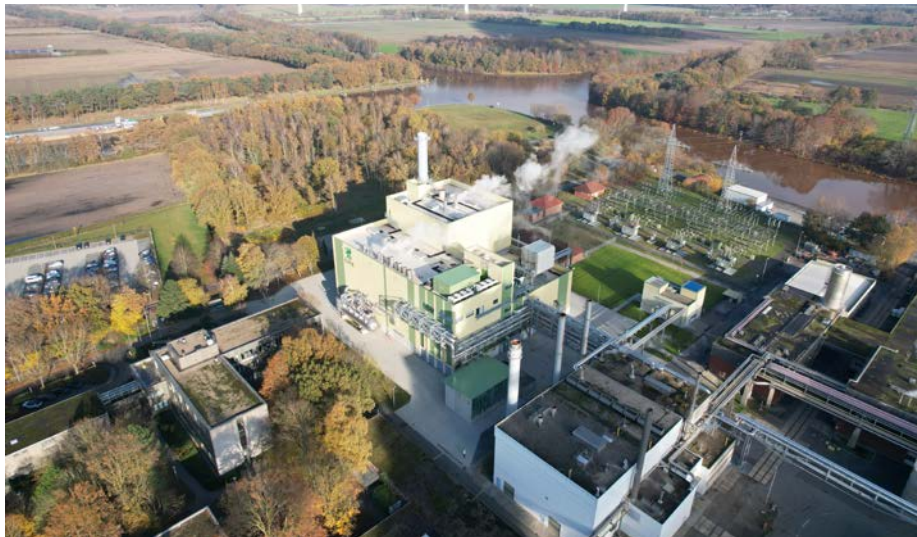
Saving energy wherever possible

Our active energy management system, certified under ISO 50001, once again led to energy savings in 2024 due to the development and implementation of energy-saving measures. Old light fixtures were replaced with new LED lighting in various areas of the mill, resulting in a 78% reduction in energy use. Additionally, the heat recovery loop on PM4 was optimized in order to introduce unused waste heat into the white water system. On PM1, enzymes are used before pulp refining to reduce electrical grinding energy.

The power plant also saw an increase in the output of the waste heat boiler, with a roughly 8% rise in maximum steam output. This ensures more efficient steam generation and extends the operating window of the power plant.

In equipment areas, thermal energy demand was continually reduced, particularly through the implementation of various measures in recent years aimed at optimizing insulation of the building envelope.

To respond to the flexibility of the electricity market, in addition to using two electrode steam boilers, successful trials were conducted with bivalent heating systems on both coating machines. This allows for a reduction in natural gas usage and enables the use of electrically operated heating systems, providing the flexibility to respond to different situations in the power grid (e.g. surplus renewable energy in the grid).



Sustainability of our business activities

Key activities at our site in this regard include our responsible sourcing of pulp, our continuous improvement of resource efficiency, openness to new technologies, especially in an environmental context, and the responsibility we assume toward our employees, the region, and our stakeholders. In this way, we ensure that economic activity, environmental protection and social cohesion go hand in hand.

In addition to the numerous initiatives undertaken at the site relating to energy,

water, waste, and social sustainability, the sustainability team established in 2021 also continued to carry out its activities in 2024. This work was primarily aimed at placing greater emphasis on the topic of sustainability within the company. Through four themed action weeks, we explored the topics of "Sustainability of Paper," "Waste at the Dörpen Site," "Industrial and Private Use of Photovoltaics," and "Community Engagement" in various ways throughout the company.



Klaus Reimann,
General Manager



Barbara T. Köster,
Manager Environmental Affairs



► **Clean Run Initiative**

The Clean Run Initiative also received considerable attention in 2024. The goal is to ensure environmentally sound production with no environmentally relevant incidents. In the Group-wide database, employees can log deviations under pre-defined categories, from 0 (not significant) to 5 (serious environmental damage). Most entries were minor observations, which shows our employees' high level of awareness regarding environmental safety. For the lower categories (0–2), regular root cause analyses are carried out in order to specifically address the most common Clean Run issues. We achieved our goal of reporting zero Clean Run incidents in 2024.

Reducing water where possible

One mill-wide project with significant water-saving potential is the use of innovative sealing technology to reduce the use of sealing water in pumps and other rotating equipment. This project, which we launched in 2023, continued in 2024, and we managed to convert several more pumps to mechanical seals that require little or no sealing water. We plan to continue this work in 2025. Detailed information can be found under the heading “Achievement of the 2024 Goals” on page 11 of this publication.

Waste and recycling

Many actions were undertaken with regard to the packaging of our papers. We have consistently continued our efforts from the previous year to reduce plastic content. As a result, in 2024 we gained additional customers for large-format ream wrappers without PE. In addition, packaging films are now ordered with 30% recycled content only.

External assessment

UPM's Basic Statement on Sustainability forms the foundation of our environmentally responsible approach. Environmental considerations have always been a key part of our thinking and actions. The certification under ISO 14001 and validation under

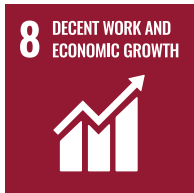


the EU Eco-Management and Audit Scheme in 1998 provided only an official framework. Over the years, we have expanded our certifications to include PEFC, FSC, the European Ecolabel “EU Flower,” and ISO 50001 in 2012.

The success of these efforts motivates us to continue having our environmental performance reviewed by independent third parties.



Contribution to UN Sustainable Development Goals in 2024



Health

3,066

employee participation in 2024 health programs



Certified fiber

100%

fibers from controlled sources



Energy

4,470 MWh/a

thermal energy savings through targeted measures in 2024

95%

certified according to PEFC/FSC (sustainable forestry)



Air

35%

CO₂ savings from the new power plant compared to national power generation



Waste

99.7%

total recovery rate



Water

3.3 m³/h

freshwater savings through targeted measures in 2024

91.6%

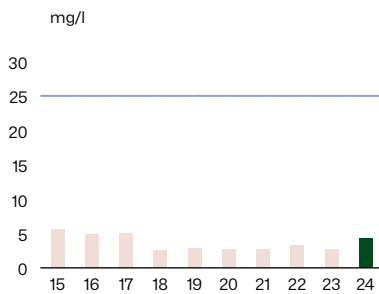
material recovery

Water

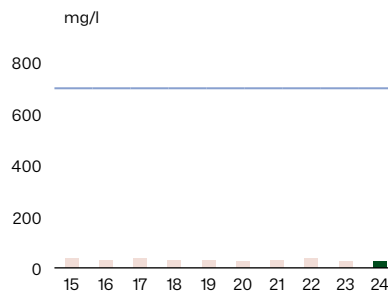


Operation of the wastewater treatment plant was stable in 2024. All discharge values were well below the legal minimum requirements on an annual average. Optimized operation significantly reduced the discharge level for total inorganic nitrogen compared to previous years.

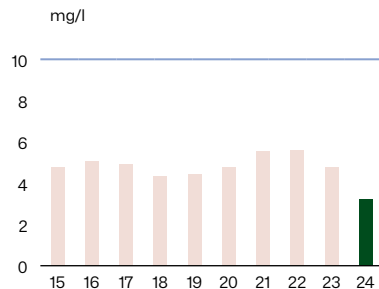
Biological oxygen demand, BOD₇



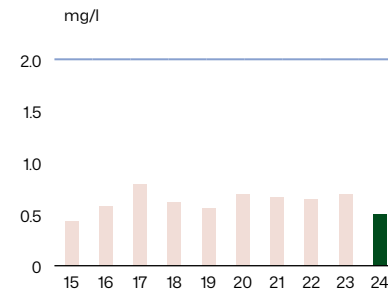
Chemical oxygen demand, COD



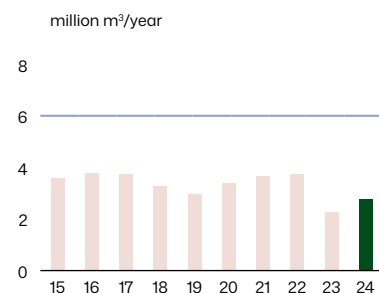
Nitrogen (inorganic), N



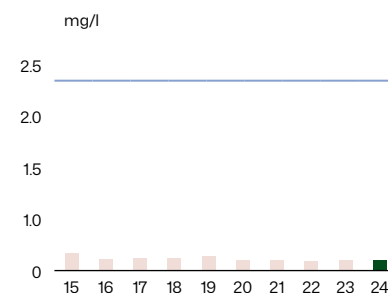
Phosphorus, P



Process wastewater volume



Adsorbable organic halogen compounds, AOX



— Limit value
■ Annual average

Waste



The amount of waste in 2024 was significantly higher than in previous years. This was largely due to an increased volume of paper waste. This included edge trimmings from a coated, wood-containing paper that we finish at UPM Nordland for another UPM mill. In addition, as in the previous year, we were once again forced to dispose of some of the edge trimmings from our own production as waste because many market-related paper machine shutdowns made internal reuse impossible.

The main waste fraction at Nordland Papier GmbH continues to be fiber and paper sludge. This also increased in 2024 compared to previous years. In 2024, investments were made to allow for the separation of the fiber material from the biosludge in the future. Going forward, this has laid the groundwork for marketing our fiber fraction as a by-product.

The recovery rate for waste in 2024 was over 99.7%, maintaining the high level to which we are accustomed.

All waste is generally handled by certified waste management companies, and all waste classified as “hazardous” is avoided wherever possible.

Our new combined heat and power plant was commissioned in 2022. At full capacity, it replaces approximately half of the steam required for production with steam generated by the mill. The remaining steam continues to be produced by the existing gas-fired boiler systems.

No sulfur emissions measurements are required for exhaust air because we use

only pure, low-sulfur natural gas. Since the power plant went into operation, the sulfur content and lower heating value of the natural gas have been checked every six months, with the results submitted to the industrial regulatory authority.

The absolute NO_x emissions at our site for 2024 also include NO_x emissions from power generation in the power plant.

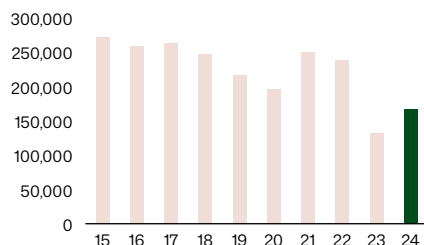
The “Carbon dioxide” chart shows emissions for Scope 1 (excluding power generation). For Scope 1 including power generation, see page 10.

Limit value (mg/m ³)		Measured annual average values (mg/m ³)							
Boilers 1-7	Power plant	Boiler 1	Boiler 3	Boiler 4	Boiler 5	Boiler 6	Boiler 7	Power plant	
CO	50	*	0.1	out of operation	0.9	1.5	4.3	3	59
NO _x	100	*	74.3		69.4	82.1	86	87	30.4

* As with NO_x, the limit values for CO for the power plant are also defined separately for the gas turbine and the supplementary firing, and are calculated as a moving average based on the current thermal input.

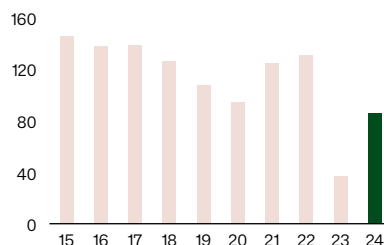
Fossil carbon dioxide, CO₂,
scope 1

t/year



Nitrogen oxides, NO_x

t/year



Organizational structure and emergency management

Legally mandated officers advise the mill management and specialist departments in the areas of water protection, waste, hazardous goods, radiation protection, fire protection, laser protection, and data protection. Specific individuals are appointed for operational implementation, in addition to the responsibility of the operator of the respective mill. This also includes requirements related to emission control, hazardous substances, and the Ordinance on Industrial Safety and Health (BetrSichV).

There are also officers responsible for the integrated management system (quality, environment, energy, and occupational safety) as well as safety officers.

Current organizational charts are available for all of these roles.

Emergency Organization:

Comprehensive emergency plans are available for all types of emergencies, such as fires, occupational incidents, and environmental incidents. The emergency manual of

the in-house mill fire department contains alarm plans and detailed instructions on how to respond to emergencies and disasters. Follow-up is carried out using the UPM “One Safety” tool.

Societal responsibility

We assume social responsibility at our site! We define this through the three pillars of sustainability: environmental, social, and economic responsibility. Our vision is to act as a value-creating, value-preserving, and forward-looking company.

Social sustainability

Many activities in the realm of social responsibility go hand in hand with occupational safety and health management. For us, social responsibility does not end at the factory gates. As part of the UPM Share & Care program, we support volunteer work in the social sector and maintain active cooperation and open dialogue with various stakeholder groups in the surrounding communities. For instance, we were able to gain several new cooperation partners in 2024 thanks to the Share & Care program. As a training company for 11 different vocational programs, we promote young talent responsibly and give young people a chance in the job market.

Environmental sustainability

Environmental sustainability means biodiversity, closing water and material cycles, and saving energy and CO₂.

At the beginning of 2023, we planted vegetation around our new employee car park at the mill, which was designed according to biodiversity criteria. This new vegetation required special care and attention due to the dry summer in 2024.

A closed loop can refer to any number of resources. Our many projects aimed at further closing the loop have already been outlined in this publication under the heading “Our Environmental Year 2024” and are also anchored in our target process.

UPM aims to replace fossil-based products with wood-based products and develop new, innovative products. At UPM Nordland, we are proud to have played a major role in the development of the “UPM Confideo” and “UPM Confideo Pro” barrier products. This product offers an alternative to conventional plastic packaging used in the food sector.

Our gas-fired power plant, which began operating in 2022, is not only making a significant contribution to our independence from the power grid but is also leading to significant CO₂ savings thanks to efficient combined heat and power generation. In addition, two electric boilers have now





been installed to support the flexible use of renewable energies.

We are working closely with our suppliers to make our sustainability activities, and therefore our social responsibility, as effective as possible. This is the only way to ensure that they understand and meet our requirements regarding sustainability and responsibility. UPM requires its suppliers to comply with the UPM Code of Conduct for Suppliers and Third Parties, which sets out minimum standards for responsibility in the areas of environmental impact, human rights, labor practices, occupational safety, product safety, and the prevention of corruption and bribery. We monitor the environmental and social performance of our suppliers by regularly collecting and analyzing data. On the basis of annual risk assessments, we decide which suppliers will undergo closer review. In cases of non-compliance, suppliers are required to take corrective action. We track the outcomes of these measures and are happy to share our expertise with suppliers to help improve their performance.

Economic sustainability

For us, being economically sustainable means offering products that are both market-compliant and profitable. This is the foundation that enables us, on the one hand, to pursue innovations in ecological sustainability. On the other hand, we view these innovations as essential for remaining market-compliant and profitable in the future.



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	Up to 1,170,000 t	Up to 1,170,000 t	Up to 843,000 t
Raw materials and additives	Chemical pulp Pigments Process chemicals Operating supplies	See UPM Corporate Environmental and Societal Responsibility Statement for more information		
Energy	Fossil fuels Purchased power	See UPM Corporate Environmental and Societal Responsibility Statement for more information		
Emissions to air	Carbon dioxide, CO ₂ (on-site fossil emissions, scope 1)*	237,898 t	131,355 t	166,723 t
	Carbon dioxide, CO ₂ (fossil emissions from purchased energy, scope 2)	272,075 t	197,304 t	207,788 t
	Nitrogen oxides, NO _x	130.23 t	37 t	86 t
Water intake	Process water and cooling water	5,261,883 m ³	3,326,321 m ³	4,044,019 m ³
Discharges to water	Effluent volume	3,743,804 m ³	2,271,636 m ³	2,755,311 m ³
	Chemical oxygen demand, COD	134.8 t	61 t	72 t
	Biological oxygen demand, BOD ₅	12 t	6 t	12 t
	Phosphorus, P	2.4 t	2 t	1.4 t
	Nitrogen, N (inorganic)	21 t	11 t	9 t
	Total nitrogen bound, TN _b	27 t	15 t	11 t
	Adsorbable organic halogen compounds, AOX	0.5 t	0.5 t	0.4 t
	Total organic carbon (TOC)			25 t
Waste	Total waste volume (excluding hazardous)	22,774 t	18,597 t	28,497 t
	of which:			
	– Fiber and paper sludge (volume inc. moisture)	17,602 t	13,598 t	18,250 t
	– Secondary sludge (volume inc. moisture)	472 t	754 t	0 t
	– Wood	114 t	47 t	44 t
	– Metal	1,438 t	806 t	1,050 t
	– Paper, cardboard, cores	2,540 t	2,890 t	8,665 t
	– Construction rubble from power plant construction	8 t	0 t	0 t
	– Waste for disposal (volume inc. moisture)	35 t	143 t	41 t
	– Other	565 t	359 t	447 t
	Hazardous waste	139 t	131 t	139 t
	of which for disposal:	100 t	82 t	52 t
	Recovery rate (based on total waste volume)	99.4%	98.80%	99.7%
Land use	Total use of land	60 ha	60 ha	60 ha
	Total sealed area	28 ha	28 ha	28 ha
	Total nature-oriented area	32 ha	32 ha	32 ha
	Green roofing	1.35 ha	1.35 ha	1.35 ha

* The operation of the CHP plant is based on energy prices, and the electricity produced is fed into the public power grid. This mode of operation helps to stabilize the German power grid. The site's electricity demand is covered by the public power grid. The CO₂ quantity reported here for UPM Nordland for Scope 1 does not include emissions from the electricity fed into the grid, as these are attributed to the power grid. The CO₂ emissions including the electricity fed into the grid amounted to 287,160 t (2022), 226,934 t (2023), 247,995 t (2024).



Performance against targets in 2024

Targets and measures	Achievement	Comments
1 Water Implement one water-saving measure per line/department as in 2022	Yes	Cost-saving measures were implemented across all lines. Total savings of approximately 3.3 m³/h were achieved.
2 Environmental incidents No category 3–5 environmental incidents	Yes	Targeted measures successfully eliminated the conditions that had led to four category 3 incidents in 2023.
3 Energy - Additional pigging of the East raw water pipeline to reduce the required pump output → Expected savings in specific energy demand of the raw water pumps: 10% - Increasing the white water temperature PM4 through optimization of heat recovery → savings of 1,875 MWh/year - Replacing the hall lighting fixtures at SM2 → expected savings of 40%	Yes Yes No	The pigging was completed. The savings in specific energy demand total 15% Savings achieved: 3,425 MWh/a The investment has been postponed until 2025.
4 UPM sustainability goal: Replacing conventional chemicals with products from recycled sources - Conducting a trial with recycled nitrogen source in the wastewater treatment plant - Conducting a trial with recycled phosphorus source in the wastewater treatment plant	Yes No	The trials with a recycled nitrogen source were successful. The search for a suitable phosphorus source will continue in 2025.
5 Raw material savings - Optimizing AKD control on PM1 - Converting shrink films to 30% recycled material - End caps for SPEC rolls (PM2) 100% without PE (similar to CommPaper) - Introduction of 100% return of label carrier paper in the finishing process	Yes Yes Yes No	The quantity of sizing agent used could be reduced due to the AKD quantity in the recovered paper now being taken into account in the control. Conversion completed Taken into account in all new orders Will be pursued further in 2025.
6 Waste Installation for separation of bio and fiber sludge in the wastewater treatment plant completed	Yes	Commissioning scheduled for June 2025.

Targets for 2025

Targets	Deadline	Department responsible
1 Water Implement one water-saving measure per line/department as in 2024	December 31, 2025	Production
2 Environmental incidents No category 3–5 environmental incidents	December 31, 2025	All
3 Energy - Converting drive for VacRoll blowers 2 and 3 on PM4 (new motor and frequency converter) → expected savings in electrical energy approx. 70% - Connecting an additional heat exchanger array in exhaust air tower 4 of PM4 to the heat recovery level PM4/SM2 → reduction of heat losses - Replacing old light fixtures with new LEDs in various areas of the administration buildings and in the hood lighting on PM1 → expected savings in electrical energy approx. 70%	December 31, 2025	Production
4 UPM Sustainability Goal: Replacing conventional chemicals with products from recycled sources - Converting nitrogen source in wastewater treatment to a recycled alternative as a new standard - Conducting a trial with recycled phosphorus source in the wastewater treatment plant	April 30, 2025 December 31, 2025	Production
5 Raw material savings - Using waste-paper-based fibers - Further reducing oil-based PE content in film implemented - New disposal concept developed for clothing	December 31, 2025	Production Finishing Production
6 Waste Separate recovery of biosludge and fiber sludge in the wastewater treatment plant as a new standard.	April 30, 2025	Production/Technical Office



Environmental verifier's declaration on verification and revalidation activities

Environmental verifier Astrid Günther (DE-V-0357), acting for TÜV NORD CERT Umweltgutachter GmbH, licensed for the scope NACE Code 1712 (papermaking), declares to have verified whether the site Nordland Papier GmbH, in D-26892, Dörpen, Nordlandallee 1, as indicated in the updated UPM Corporate Environmental and Societal Responsibility Statement 2024 of the mentioned site (registration no. FI-000058), meets all requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 as amended by Regulation (EU) 2017/1505 and Regulation (EU) 2018/2026 of the commission on the voluntary participation by organisations in a Community Eco-Management and Audit Scheme (EMAS).

By signing this declaration, I declare that:

- the verification and validation has been carried out in full compliance with the requirements of Regulation (EC) No 1221/2009,
- the outcome of the verification and validation confirms that there is no evidence of non-compliance with applicable legal requirements relating to the environment,
- the data and information of the updated Environmental Statement 2024 of Nordland Papier GmbH, reflect a reliable, credible and correct image of all the activities of

Nordland Papier GmbH, within the scope mentioned in the updated Environmental Statement 2024.

This document is not equivalent to EMAS registration. EMAS registration can only be granted by a Competent Body under Regulation (EC) No 1221/2009. This document shall not be used as a stand-alone piece of public communication.

Essen, 17th of June 2025

Astrid Günther
Environmental Verifier
DE-V-0357
TÜV NORD CERT Umweltgutachter GmbH



upm.com

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