

UPM Nordland Papier

ENVIRONMENTAL AND SOCIETAL RESPONSIBILITY 2021



UPM Nordland Papier

UPM Nordland Papier is located in the Emsland town of Dörpen/Lower Saxony. Founded in 1967, the paper mill ranks today among the biggest fine paper producers worldwide.

UPM Nordland Papier produces woodfree graphic writing and printing papers – so-called fine papers – on three paper machines and two coating machines. Additionally, one paper machine was converted to specialty papers. The mill’s main raw material for papermaking is chemical pulp. Calcium carbonate is used as a filler. Coated paper grades additionally contain kaolin as a pigment.

The wastewater generated from the production processes is cleaned in the mill’s own effluent treatment plant before it is discharged into the Ems river. Fresh water is drawn from deep wells, paying attention to sustainable groundwater regeneration. All of the electricity required by the mill is purchased from the public grid. The steam required for paper drying is generated by combustion of natural gas in the mill’s own combined heat and power plant.

Two daughter companies of UPM-Kymmene Beteiligungsgesellschaft operate on the mill premises. The nortrans Speditionsgesellschaft mbH provides freight transport services for the paper mill. NorService GmbH specialises in custom paper finishing. These two companies are not validated under EMAS.



Production capacity	Up to 1.170 million tonnes/annum	
Personnel	Approx. 1,282 (total headcount including apprentices) as at 31.12.2021	
Products	Fine Papers: UPM Fine UPM Finesse UPM Preprint UPM Digi UPM Office UPM Mail UPM Label UPM PrePersonal UPM Unique UPM Office Recycled plus UPM Office Recycled premium	Specialty papers: UPM Brilliant™ UPM Brilliant™ Forte UPM Honey™ Plus UPM Honey™ Plus Forte UPM Golden™ UPM Golden™ Forte UPM Solide™ Strong UPM Asendo 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 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 for copying and graphic paper Blue Angel for UPM Office Recycled plus	



UPM Nordland Papier Environmental and Societal Responsibility 2021 is a supplement to the Corporate Environmental and Societal Responsibility Statement of UPM’s pulp and paper mills (available at www.upm.com) and provides mill-specific environmental and societal performance data and trends for the year 2021. The annually updated mill supplements and the UPM Corporate Environmental and Societal Responsibility Statement together form the joint EMAS Statement of UPM Corporation. The next Updated UPM Corporate Environmental Statement and also this supplement will be published in 2023.

UPM delivers renewable and responsible solutions and innovate for a future beyond fossils across six business areas: UPM Fibres, UPM Energy, UPM Raflatac, UPM Specialty Papers, UPM Communication Papers and UPM Plywood. As the industry leader in responsibility, we are committed to the UN Business Ambition for 1.5°C and the science-based targets to mitigate climate change. We employ 17,000 people worldwide and our annual sales are approximately EUR 9.8 billion. Our shares are listed on Nasdaq Helsinki Ltd. UPM Biofore – Beyond fossils. www.upm.com



For more information about FSC certification visit fsc.org



For more information about PEFC certification visit pefc.org



EU Ecolabel : FI/011/001



www.blauer-engel.de/uz14

Review of the year 2021

ENVIRONMENTAL PERFORMANCE IN 2021

Sustainable operations

Important activities at our mill in this respect include the sustainable sourcing of pulp, the continuous improvement of resource efficiency, an open mind for new technologies, particularly in the environmental field, and taking responsibility for our workforce, the local communities and our stakeholders. In this way, economy, environmental protection and social cohesion go hand in hand.

Clean Run campaign

In 2021 too, a strong focus was on the Clean Run campaign, aimed at environmentally friendly production without environmentally relevant incidents. In a Group-wide database, employees can record deviations according to predefined categories, from 0 (observation) to 5 (serious environmental damage). There were mainly minor observations, which demonstrates the employees' awareness of environmental safety issues, on which we continuously provide training. Lower category incidents were at an all-time high. On the positive side, there were no category 3, 4 or 5 incidents. For the less serious categories (0–2), a root cause analysis is carried out regularly in order to be able to specifically eliminate the most common Clean Run problems.

Sustainability work group

A 14-strong team from all areas of the site started work in September with the aim to jointly initiate projects that reflect our vision: making paper in a way that demonstrates appreciation, creates added value and leads the way into the future. The following fields of action were identified: "Sustainability Culture", "Focus on People", "Packaging & Product Development", "Closing the Loop", "Use of Raw and Auxiliary Materials", "Logistics" and "Energy". All employees at the site have the opportunity to enter their suggestions online into an idea box and have the chance to receive a voucher if their idea is implemented.

Good measuring systems for better results

If you are already working at a high level but want to improve further, accurate measurements are essential. Only if you know exactly where there is still potential, you can use it efficiently. That is why we have installed additional measuring systems for compressed air. In this way, not only can we determine more quickly which machine is responsible for an increase in consumption, but we can also sharpen our employees' awareness.

Saving energy wherever possible

Our active energy management under ISO 50001 brought about many improvements also last year. For example, in order to reduce our gas consumption, a new nozzle technology was installed on coater no. 2, and in converting, sealing work was started on the loading gates, allowing to reduce heat losses.

Resource efficiency

Through a more targeted dosing of milk of lime, which resulted in more stable system conditions (pH/conductivity), we were able to reduce biocide use on PM 4 by 15 %. In addition, the use of antifoaming agents was reduced by approx. 60 %.

Third-party audits

UPM Nordland Papier's environment-friendly business practices are based on UPM Communication Paper's environmental policies. Environmental concerns have always been deeply ingrained in our way of thinking and doing business. Certification to ISO 14001 and validation to the EU's Eco-Management and Audit Scheme (EMAS) in 1998 just provided the formal framework for this approach. In the course of the last years, we have broadened our certifications to include PEFC, FSC and the EU's environmental labelling scheme ("EU flower") and, in 2012, ISO 50001.

These successful measures strengthened our resolve to also in the future have our environmental performance third-party-audited.



Klaus Reimann,
General Manager



Barbara T. Köster,
Manager Environmental Affairs

Contribution to UN Sustainable Development Goals in 2021



Water

COD load reduced by

64%

from 2012

BOD₅ load reduced by

75%

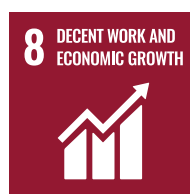
from 2012



Waste

Recovery rate:

> 98%



Health

Number of times employees who made use of our healthcare offerings in 2021:

2,539



Energy

Specific energy demand (power and gas) reduced by

-2.9%

in 2021 from 2020



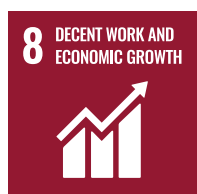
Certified fibre

100%

from controlled sources of which

> 90%

certified under PEFC/FSC (sustainable forestry)



Workforce

> 2,241

training days for our employees in 2021



Water



In 2021 the effluent treatment plant ran stably, the average annual outflow concentration being much lower than the statutory requirements.

There were no Clean Run category 3 (or higher) incidents in 2021. With the new process water treatment plant with ultrafiltration and reverse osmosis we achieved our aim to save 80 m³/h of fresh water. This value was also nearly achieved throughout the year 2021. However, the reverse osmosis modules had to be replaced, as the desired output could no longer be achieved.

Already in 2020, the start-up of the re-built paper machine 2 led to increased

wastewater volumes, which could not be fully compensated by the process water treatment. Due to the increased output of speciality papers in 2021, the wastewater volume increased further overall. However, savings in the process reduced the specific water consumption per kg of paper. To further reduce the amount of wastewater, the implementation of additional savings ideas is planned for 2022.

Effluent treatment at UPM Nordland Papier

The site carries out primary sedimentation, biological treatment and secondary sedimentation of its effluents.

Waste



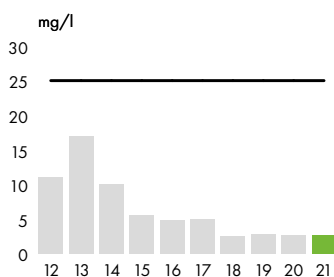
The amount of waste in 2021 was significantly smaller than in 2020, as factors such as the rebuild of PM2 and the beginning of the power plant project causing large amounts of construction waste were no longer relevant.

Fibre and paper sludge constitute the largest waste fraction at UPM Nordland Papier. They were able to be reduced by 9% in 2021, amongst other things through the more stable operation of PM 2. During the year, the investigations into options for recovering biological and fibre sludge separately, started in 2020, were continued and led to a concrete concept for future utilisation. For this purpose, pilot tests were also carried out on site and talks with recyclers were initiated. An investment proposal will be submitted in 2022.

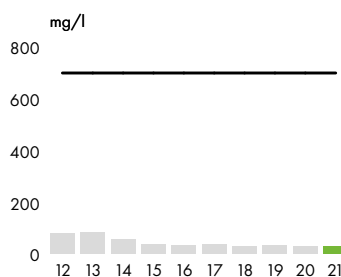
The waste recovery rate in 2021 was in excess of 98%, remaining at the customary high level.

All wastes are forwarded to certified waste management companies for disposal and the generation of hazardous wastes is avoided wherever possible.

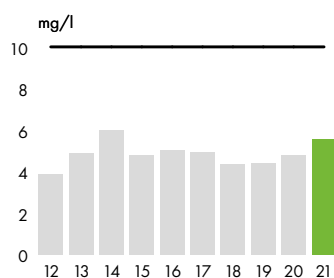
Biological oxygen demand, BOD₅



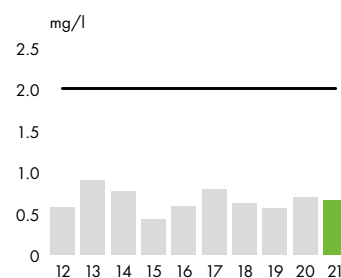
Chemical oxygen demand, COD



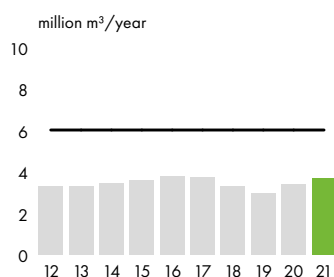
Nitrogen (inorganic), N



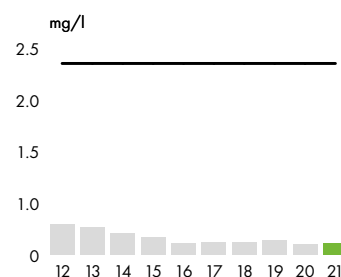
Phosphorus



Effluent volume



Adsorbable organic halogen compounds, AOX



— Limit value ■ Annual mean value

Air



As UPM Nordland Papier uses pure, low-sulphur natural gas, it is not necessary to measure the concentration of sulphur in the exhaust air.

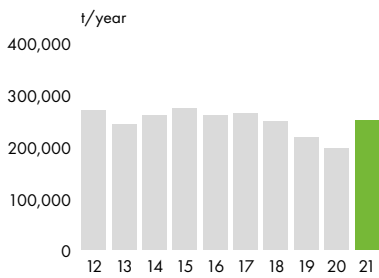
The boiler plants are still being operated close to their emissions limit of 100 mg/m³ NO_x.

No limits were exceeded in 2021.

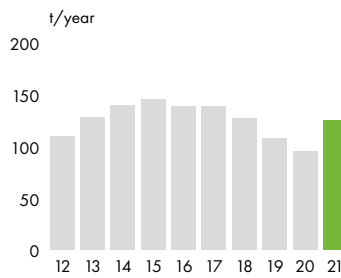
CO₂ and NO_x emissions in absolute terms were higher in 2021 than in 2020 as a result of the mill's stronger capacity utilisation.

	Limit value (mg/m ³)	Mean values measured (mg/m ³)					
		Boiler 1	Boiler 3	Boiler 4	Boiler 5	Boiler 6	Boiler 7
CO	50	1.83	out of service	1.14	1.56	2.36	1.57
NO _x	100	81		75	80	87	86

Fossil carbon dioxide, CO₂



Nitrogen oxide, NO_x



Organisational structure and emergency organisation

As required by law, appointed officers advise the mill management and the specialist departments in the areas of water protection, waste, hazardous goods, radiation, fire and laser protection and data security. In addition to the operators in charge of the plants, there are designated individuals in charge of the operational implementation. This also includes requirements regarding

immission control, hazardous waste and the industrial safety ordinance.

In addition, there are designated representatives responsible for the integrated management system (quality, environment, energy and occupational safety).

Relevant organisational charts are available and up to date.

Emergency organisation

Comprehensive emergency plans have been defined for emergencies of all kinds, such as fire, industrial accidents and environmental incidents. The mill fire brigade's emergency manual contains instructions for alerting and detailed procedures for emergencies and catastrophes. Follow-up is provided in accordance UPMs "One Safety" tool.

Societal responsibility

Health and safety at work

At UPM, occupational safety and preventive healthcare go hand in hand, because just preventing accidents is not enough for us. Our company wants healthy employees who enjoy their work and have fun in life. Our concept in this field is diverse and includes training for occupational health and safety, health days and non-smoking seminars. Also, we offer all our employees an "activity card", with which they can collect points for personal health activities. Every year we hold a competition with prizes to promote occupational safety. In addition, there is the "nopaFit" health room, where medical check-ups are conducted.

Our mill sports team was able to hold a sports day in the middle of September, where 25 participants earned the German sports badge. In the same month, the Dörpen city cycling campaign took place, an event organised by the Climate Alliance. Of course, our mill sports team was among the participants. After all, our employees have been able to lease bicycles through the company since as far back as 2015, allowing them to do something good both for nature and their health.

Almost 700 employees of Nordland Papier GmbH have been taking part in the ELITE study since November 2019. Through this study, participants not only receive information about their personal risks for stroke, dementia or heart attack, but are also immediately given suggestions on how to prevent and reduce their individual risks.

Further health offerings for our employees include an annual blood donation event and the flu and Covid-19 vaccination campaigns.

Community involvement

We make social responsibility a reality through our strong commitment to responsible and ethical business practices wherever we operate. Well-functioning stakeholder dialogue is a key component for UPM's success as a global company. We are committed to developing the vitality of the communities close to our operations through active co-oper-

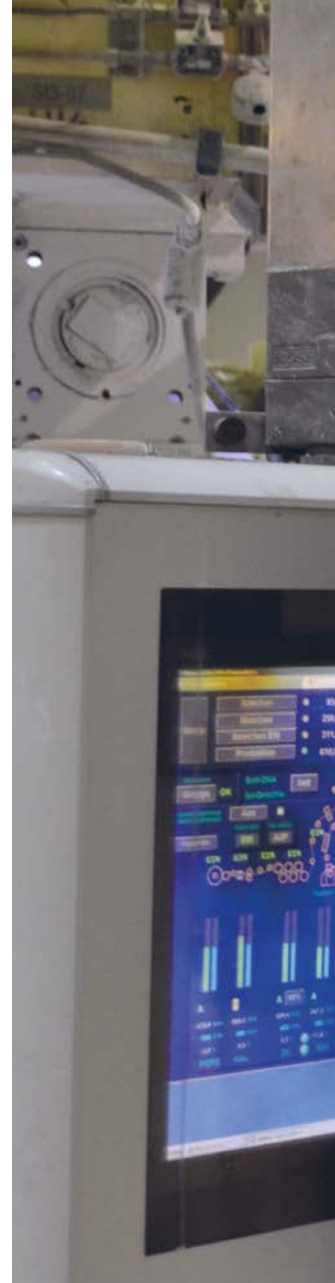
ation and open dialogue with various stakeholders.

For the past 12 years, UPM Nordland Papier has distributed, as part of the "activity card" scheme, a total of € 5,000 each year to ten local associations proposed by the employees. As the decision is made by drawing lots, numerous and very different associations have benefitted from our support, such as children's fire brigades, music clubs, youth groups, sports clubs, etc.

Youth work

On 22 April, a Career Day took place for all boys and girls from grades 5–13 as well as their parents, teachers and any other interested parties. In order to give the youngsters insights into the workings of our paper mill and available career options, we decided, because of Corona, to organise the day as a purely online event. All the apprentices at the site were actively involved and prepared presentations on their professional training well in advance in order to offer the young participants an unforgettable experience.

This year, 13 young people started training with UPM Nordland Papier for careers such as electronics technician for industrial engineering, industrial me-





chanic, paper technologist, machine and plant operator, technical product designer, industrial clerk and Bachelor of Arts. UPM is proud to offer apprentices a varied and interesting career in an innovative and environmentally responsible international company through a combination of theoretical knowledge and practical experience.

Commitment to responsible sourcing practices

We work closely with our suppliers to ensure that they understand and meet all of our requirements on sustainability and responsibility. UPM requires its suppliers to apply the principles of the UPM Supplier and Third Party Code which defines the minimum level of

performance in the areas of environmental impacts, human rights, labour practices, health and safety at work, product safety and corruption and bribery. We monitor the environmental and social performance of our suppliers by regular data collection and analysis. Based on the risk assessments we conduct every year, we decide which suppliers should be subjected to closer scrutiny. In case of non-conformities, the supplier has to take corrective action. We closely monitor the outcome of these measures and are happy to make our expertise available to our suppliers to help them improve their performance.

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.

		2019	2020	2021
Production capacity	Paper	Up to 1,235,000 t	Up to 1,075,000 t	Up to 1,170,000 t
Raw materials and additives	Chemical pulp Pigments Process chemicals Consumables	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		
Airborne emissions	Carbon dioxide (fossil), CO ₂ Nitrogen oxide, NO _x	216,145 t 107.11 t	195,931 t 94.42 t	249,300 t 124.72 t
Water intake	Process and cooling water	4,274,252 m ³	4,740,707 m ³	5,402,546 m ³
Discharges to water	Effluent volume Chemical oxygen demand, COD Biological oxygen demand, BOD ₅ Phosphorus, P Nitrogen, N (inorganic) Total nitrogen bound, TN _b Adsorbable organic halogens, AOX	2,965,213 m ³ 92 t 8 t 1.7 t 13 t 0.5 t	3,392,600 m ³ 92 t 9 t 2.3 t 16 t 0.4 t	3,670,061 m ³ 103 t 10 t 2.4 t 20 t 26.7 t 0.5 t
Waste	Total waste volume (excluding hazardous waste) of which – Fibre and paper sludge (wet) – Wood – Metal – Paper, cardboard, pins – Power station construction waste – Waste for disposal (wet) – Other waste Hazardous waste of which amount for disposal: Recovery ratio (in relation total waste volume)	21,628 t 16,881 t 310 t 1,896 t 1,641 t 900 t 112 t 98.5%	28,601 t 19,633 t 122 t 1,522 t 2,992 t* 3552 t 780 t 377 t* 321 t 98.1%	23,360 t 17,876 t 149 t 1,535 t 2,678 t 444 t 148 t 531 t 152 t 120 t 98.9%
Size of mill area	Total use of land Sealed surface Semi-natural areas Greened roofs	60 ha 27 ha 33 ha 1.35 ha	60 ha 28 ha 32 ha 1.35 ha	60 ha 28 ha 32 ha 1.35 ha

* Due to the conversion of paper machine 2 and the changeover to a new paper grade, these figures are higher compared to previous years.



Performance against targets in 2021

TARGETS	ACHIEVEMENT	COMMENTS
1 Water Prepare investment decision for expansion of effluent treatment plant by process water recycling to 160 m ³ /h	No	Postponed. Alternative options are being explored.
2 Implementation of energy saving measures		
– Insulate two broke towers on PM2 • saving of approx. 2,700 MWh/a	Yes	
– Newly connect chemical pulp supply from South tower • electricity saving of approx. 1,600 MWh/a	Yes	
– Install new energy-optimised nozzle system in gas drying section of SM2 • heat energy saving of 14,800 MWh/a	Partly	– Rebuild partly completed. Evaluation of actual energy saving possible only in 2022.
3 Environmental incidents No Clean Run Category 3, 4 and 5	Yes	No category 3–5 incidents in 2021.
4 Measures to achieve UPM sustainability goals 2030		
– Test recycled nutrients in effluent treatment plant	No	Trials are being prepared, but have not yet been carried out.
– Test recycled phosphorus in effluent treatment plant	No	
5 Waste Reduce amount of effluent treatment residue by 3% from 2020	Yes	9% less effluent treatment residue than in 2021.

Targets for 2022

TARGETS	DEADLINE	DEPARTMENT RESPONSIBLE
1 Water – Implement water savings per line/department as per project list	31.12.2022	Production/AR
2 Environmental incidents – No Clean Run Category 3–5 incidents	31.12.2022	All departments
3 Implementation of energy saving measures	31.12.2022	Production and Converting
– Replace fluorescent and halogen lamps in Converting 3/4/6 by LED lamps • Potential power saving of 118 MWh/a		
– Newly adjust OptiDry System of PM1 • Potential gas saving of 2% related to OptiDry		
– Install new energy-optimised nozzle system in gas drying section of SM2 to save 14,800 MWh/a of heating energy		
4 Measures to achieve UPM sustainability goals 2030		
– Test recycled nutrients in effluent treatment plant	31.12.2022	Production
– Test recycled phosphorus in effluent treatment plant	31.12.2022	Production
5 Raw material savings in the paper loop – Prepare investment proposal for inhouse reuse of small diameter rolls and paper in sheets	31.12.2022	Production/NSC
6 Waste – Implement separation of biological and fibre sludge in effluent treatment plant and identify more sustainable recovery options	31.12.2022	Production



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 17.12 (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 2021 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 2021 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 2021.

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, 31.03.2022


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



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