



ARCTIC PAPER



# EMAS 2023

## Environmental Report



Arctic Paper Kostrzyn S.A.

# ARCTIC PAPER KOSTRZYN S.A. ENVIRONMENTAL REPORT 2023

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Arctic Paper Kostrzyn S.A. (APK S.A.) is Poland's largest producer of offset papers and the second largest producer of graphic papers. Since 1993, the company has been part of the Swedish paper group, **Arctic Paper**.

At the Kostrzyn mill, we primarily produce **Amber** brand papers. These high-quality, uncoated, and wood-free papers are crafted in a modern, safe working environment that is also environmentally friendly. Our paper range also caters to the packaging market, including bleached kraft papers.

Arctic Paper Kostrzyn S.A. is certified under several management systems: **ISO 9001** for quality management, **FSSC 22000** for food safety in packaging materials, and **ISO 45001** for occupational health and safety. Additionally, we have implemented the **ISO 14001** environmental management system and publish a publicly available **EMAS** report detailing our environmental impacts.

## ARCTIC PAPER S.A.

Arctic Paper S.A. is a leading European producer of high-quality graphic paper, listed on the stock exchanges in Warsaw (Giełda Papierów Wartościowych – GPW) and Stockholm (Nasdaq Stockholm). The group manufactures a wide range of uncoated and coated wood-free paper, as well as uncoated wood-containing paper for printing houses, paper distributors, book and magazine publishers, the advertising industry, and packaging producers. Operations are conducted at three mills: in Kostrzyn nad Odrą (Poland), in Munkedals, and Grycksbo (Sweden). Sales offices are spread across Europe, supporting operations and maintaining customer contact.

The strong and recognisable brands: Amber, Arctic, Munken, and G are synonymous with quality and sustainable production processes. Arctic Paper S.A. is a pioneer in environmental protection and the development of new products.

The total annual production capacity of the group's three mills is approximately 700,000 tonnes. Arctic Paper Group currently employs 1,223 people, with sales offices located in 13 European countries.

## ARCTIC PAPER IN EUROPE

• Paper Mill • Sales Office • Head Office



## PREFACE

Dear Readers,

We are pleased to present the latest EMAS report from Arctic Paper Kostrzyn S.A., which reflects our commitment to responsible business practices. Navigating the ever-changing business landscape, it is crucial to maintain transparency regarding our efforts to minimise environmental impact.

As part of our involvement, we are taking significant steps to enhance energy efficiency, optimise water usage, and increase the share of renewable energy in our production. The goal for our factory in Kostrzyn, as well as the entire Arctic Paper Group, is to transition to completely fossil-free energy by the year 2035, resulting in a substantial reduction in greenhouse gas emissions. To achieve this, we are actively investing in renewable energy sources.

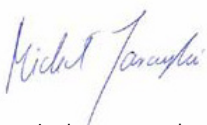
By the end of June, our 17 MW photovoltaic farm in Kostrzyn will be operational, and by 2025, we expect to complete the next phase of expanding our renewable energy sources. Similar to last year, we continue to face a diverse business environment due to economic uncertainties.

Guided by the principles of a circular economy, we are committed to providing sustainable products made from wood fibres. Our duty also includes the active protection of biodiversity in protected areas and forests, with particular attention to our suppliers.

Collaboration with our partners is crucial to enhancing the benefits of sustainable environmental impact. Arctic Paper Kostrzyn S.A. adheres to the Group's Code of Conduct, which aims to strengthen ethical practices and ensure compliance with our principles.

Finally, I would like to extend my heartfelt thanks to all employees for their tremendous efforts throughout the year in achieving positive environmental outcomes.

Yours sincerely,



Michał Jarczyński

President of the Management Board, Arctic Paper Kostrzyn S.A.

Kostrzyn nad Odrą, 7 June 2024



# MILL FACTSHEET

**Brand:** Amber Graphic, Amber Preprint, Amber Volume, Amber Highway, Amber Terra, Munken Kraft, Munken Kraft HighWhite

**Production capacity:** 315 000

**Sales breakdown:** Eksport 73%, Kraj 27%

**Employment:** 453

## ENERGY

Gas boilers: 169 MW

Back-pressure turbines: 18,7 MW

Gas turbines: 21,8 MW

PM	Width	Basic weight	Speed	Capacity
PM1	5300	40-120 g/m <sup>2</sup>	950 m/min	155 000
PM2	5300	70-170 g/m <sup>2</sup>	800 m/min	160 000

SHEET CUTTERS	Sheet width	Sheet length	Capacity
6 pcs	30 – 160 cm	32 – 160 cm	180 000 ton/year

**STORAGE CAPACITY** 16 000 ton

## CERTIFICATES

**Environmental Management System according to ISO 14001:2015:**

Approval No.:

ISO 14001 – 0052495 / 2027-04-30

**Environmental Management System according to EMAS 1221/2009**

**(as amended):** PL 2.08-001-13

**Supply Chain according to FSC®:**

NC-COC-012351 / 2026-12-06

**Supply Chain according to PEFC:**

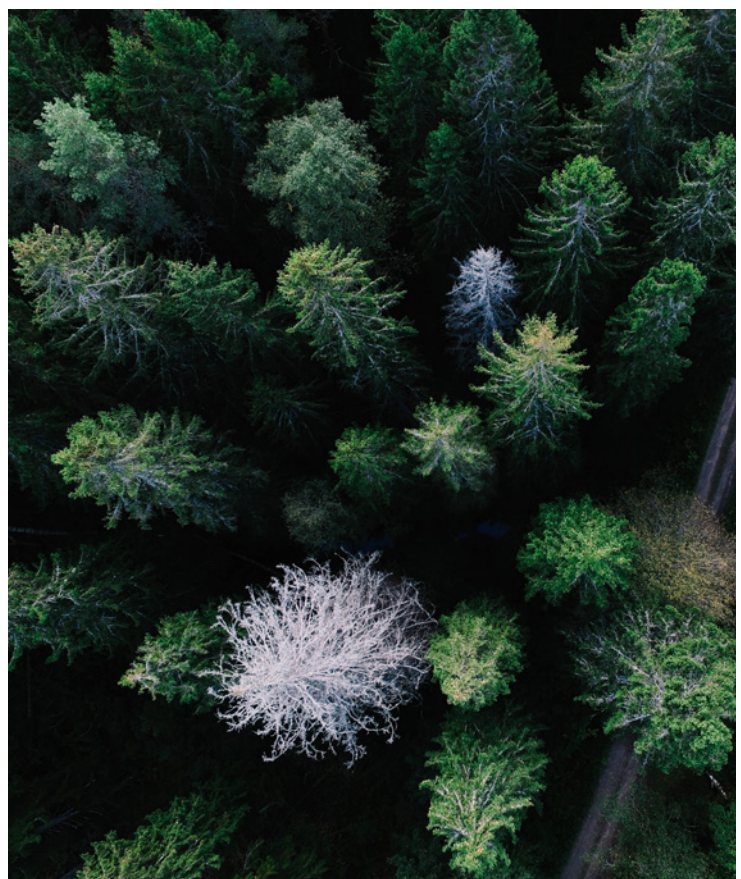
PBN-PEFC-COC-000022 / 2027-06-055



The mark of responsible forestry



Promoting Sustainable Forest Management  
www.pefc.org

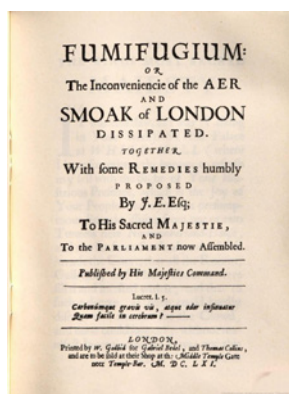


# ENVIRONMENTAL MANAGEMENT

## Awareness

In modern history, the understanding of the interdependencies between humans and the environment was marginalised early on. Natural resources were deemed inexhaustible, and human impact was considered negligible. The focus was primarily on issues that materially and directly affected health. To enable a systemic approach, methods for environmental review were developed, thus laying the foundation for further environmental management.

In 1661, John Evelyn published “*Fumifugium or The Inconveniencie of the Aer and Smoak of London dissipat*”, a work that was a precursor to modern environmental reviews.



## Subject

Environmental management can be defined as the organised acquisition of knowledge about the environment and the gradual reduction of one’s negative impact on it. EMAS and ISO 14001 are documents that specify the conditions and form the cornerstone of our environmental management systems. They are not merely certificates of legal compliance but they also promote continuous improvement through procedures, audits, goals, and programmes.

## Arctic Paper as a pioneer

Currently, there are numerous incentives driving efforts to mitigate negative environmental impacts. With its long-term commitments and well-established systems, Arctic Paper is a group that distinctly aims to reduce its environmental footprint, enhance efficiency, and engage in open dialogue.

# ENVIRONMENTAL POLICY

„In our concern for the natural environment, we always opt for sustainable solutions”

The aim of Arctic Paper Kostrzyn is to minimise the negative impact of the company’s processes on the environment.

Measures to achieve these goals include:

1. increasing employee awareness of environmental protection,
2. maximising the use of certified raw materials,
3. optimising water consumption,
4. reducing unit energy consumption,
5. decreasing noise emissions into the environment,
6. preventing pollution and managing all solid waste generated,
7. ensuring compliance with legal requirements regarding environmental protection

Arctic Paper Kostrzyn S.A. complies with legal standards and maintains a transparent communication about the impact of its operations on the environment. The environmental policy of Arctic Paper Kostrzyn is known to all employees and is accessible to all interested parties.

President of the Management Board  
Michał Jarczyński  
Kostrzyn nad Odrą, 3 July 2023



# PAPER PRODUCTION

## PULP RECEPTION

At our facility, we source pulp in the form of bales from external suppliers, as we do not produce it internally. Upon arrival at the plant, these pulp bales are stored in our pulp warehouse until needed.

The pulp bales are dissolved in internally purified process water and then ground in mills to soften the fibres and make them swell. Grinding is crucial for enhancing the paper's strength properties. Various additives and auxiliary materials such as fillers, adhesives, and starch are introduced. The pulp slurry is filtered at multiple stages to remove any foreign particles.

## PAPER MACHINE

### / **Headbox and wire section**

The function of the headbox is to distribute the diluted paper mass across the entire width of the wire. In the wire part, dewatering and formation of the paper web take place.

### / **Press section**

Next, the dewatered paper web moves to the press section. Here, the paper is given the correct density and surface structure.

### / **Surface treatment**

After drying, both sides of the paper are treated in the coating process. This treatment gives the paper a smoother and more durable surface with improved printing properties. Following this process, the surface is dried in infrared dryers and in the second drying section with steam-heated cylinders.

### / **Machine calendering and winding**

The paper web passes through a calender, which gives it its final surface structure. The finished web is then wound onto a reel and transferred to the cutter.

### / **Cutter**

At the cutter, the large reel is divided into smaller rolls according to customer orders. Various roll widths are combined to optimally utilise the full width of the web.

## FINISHING

### / **Sheet cutters**

The rolls proceed to further processing. On the sheet cutters, they are cut into sheets of various formats as requested by the customer. Some sheets are packed using an automatic ream wrapping machine.

### / **Pallet Packing**

Pallets of sheets are supplied with a cardboard cover and shrink-wrapped for packaging.

### / **Roll Packing**

Rolls destined for direct delivery to customers are equipped with protective packaging and labelled for easy identification.

## WAREHOUSING AND SHIPPING

Finished rolls and pallets of sheets are stored in the factory's finished goods warehouse until released for transportation to the customer via road, rail, or sea, depending on the customer's geographic location.



## LOCAL PROCESSES

### ENERGY UTILISATION

1. The primary fuel used for energy production is locally sourced natural gas. The backup fuels are light fuel oil and high-methane natural gas.
2. The gas parameters are continuously monitored before combustion.
3. The generated heat is used to produce process steam, which is utilised for drying paper.
4. Electricity for paper production is obtained from two generators coupled with gas turbines, two generators connected to steam turbines through pressure reduction, and renewable photovoltaic energy sources.
5. Emissions to the atmosphere are monitored continuously or periodically in accordance with applicable reference methodologies.

## LOCAL PROCESSES

### WASTEWATER TREATMENT

1. The first stage of treatment involves removing contaminants from the wastewater generated during the paper production process (mainly cellulose fibres and filler particles). This treatment occurs in tanks called sedimentation basins, where contaminants settle freely at the bottom and are removed, while the pre-treated wastewater flows to the next stage.
2. The second stage of wastewater treatment takes place in two aerobic bioreactors. These are tanks into which air is supplied. The prefix “bio” indicates that the dissolved contaminants in the wastewater are broken down by microorganisms.
3. In the third stage, the treated wastewater is separated in a sedimentation tank from the by-products produced by bacteria and then directed to a flotation chamber, where it undergoes further purification using air and chemical agents. The treated wastewater is then discharged into the Warta River.
4. The separated sludge from the mechanical and biological treatment plants, after mixing and dewatering, is sent for recycling (e.g., composting).





## ENVIRONMENTAL DATA SUMMARY

Below are the raw materials, auxiliary materials, and energy required to produce 1 tonne of paper in 2023 (2022 and 2021). Also listed are the emissions to air and water, as well as the amount of waste generated during production

### RAW MATERIALS

Year	2023	2022	2021	
Water	17,18***	11,15	11,22	m <sup>3</sup>
Pulp	740,8	739,9	734,5	kg
Filler	344,1	323,3	335,6	kg
Chemical additives	54,5	56,6	64,7	kg

### ENERGY

Year	2023	2022	2021	
Electricity	614,5	525,5	539,4	kWh
Heat	8,4	7,3	7,6	GJ
Natural gas, local	442	345	303	m <sup>3</sup>

### EMISSIONS TO AIR

Year	2023	2022	2021	
SO <sub>2</sub>	0,06	0,03	0,04	kg
NO <sub>2</sub>	0,59	0,46	0,51	kg
CO <sub>2</sub>	541,4	418,4	373,9	kg

### EMISSIONS TO WATER

Year	2023	2022	2021	
Suspended solids	0,060	0,067	0,064	kg
COD <sub>Cr</sub>	0,38	0,31	0,29	kg
BOD <sub>5</sub>	0,03	0,04	0,03	kg
Nitrogen total (N)	0,100	0,080	0,063	kg
Phosphorus total (P)	0,005	0,003	0,002	kg
Waste water volume	15,84***	10,7	10,7	m <sup>3</sup>

The above figures relate to the net production values according to BAT for the production of paper and cardboard.

We comply with all legal and other requirements applicable to the operations of Arctic Paper Kostrzyn S.A. In 2023, no environmental incidents were recorded.

\* allocation of free CO<sub>2</sub> emission allowances for 2023; parameter not covered by permissible values

\*\* indicator [t/year] considering the wet mass of waste

\*\*\* pertains to the normal operation of paper production lines

### WASTE

#### RECYCLING

2023	2022	2021	
11,60	12,27	10,47	kg
25,55**	25,23**	21,56**	kg

#### LANDFILLING / DISPOSAL

2023	2022	2021	
0,64	0,27	0,50	kg

#### HAZARDOUS WASTE

2023	2022	2021	
0,17	0,08	0,10	kg

Compliance with integrated permit conditions	Permitted Value (integrated permit)	2023 Results	Unit
Production volume	380 000	176 156	t/year

#### WATER POLLUTANTS

	2023	2022	2021	Unit
COD	1,5	0,38	0,38	kg/t
Suspended Solids	0,35	0,06	0,06	kg/t
Total Nitrogen	0,1	0,10	0,10	kg/t
Total Phosphorus	0,012	0,005	0,005	kg/t
BOD <sub>5</sub>	30	2,29	2,29	mg/l

#### EMISSIONS TO AIR

	2023	2022	2021	Unit
Dust	13,04	1,2	1,2	t/year
SO <sub>2</sub>	41,58	12,1	12,1	t/year
NO <sub>2</sub>	348	128,7	128,7	t/year
CO <sub>2</sub>	89 227*	118 825	118 825	t/year

#### OTHER REQUIREMENTS

	2023	2022	2021	Unit
Noise	55/45	47,9/44,3	47,9/44,3	dB (A)
Fresh water intake	12 000	8 292	8 292	m <sup>3</sup> /24h
Wastewater volume	11 000	7 441	7 441	m <sup>3</sup> /24h
Wastewater temperature	35	16-31	16-31	°C
Sludge	7 500	4 096**	4 096**	t/year



## BIODIVERSITY

A significant environmental issue currently facing the Earth is the reduction of forested areas. This phenomenon has serious consequences, including the disruption of the water cycle within ecosystems, increased soil erosion, loss of livelihoods for local communities, and a decline in biodiversity. One of the main causes of this situation is the illegal trade in wildlife and plants.

Since 2007, Arctic Paper Kostrzyn S.A. has primarily used pulp produced from certified wood, either FSC® or PEFC, which ensures that:

- the wood does not come from illegal sources,
- the wood does not originate from endangered areas or regions with high conservation value,
- the wood is not sourced from genetically modified trees,
- the harvesting of wood does not infringe on the traditions and rights of indigenous peoples

Performance indicators	Unit	2023	2022	2021
Percentage of pulp suppliers with FSC® and/or PEFC certification	%	100	96*	100

\*supply chain disruptions due to the situation in Ukraine

## SIGNIFICANT ENVIRONMENTAL ASPECTS

The environmental aspects of Arctic Paper Kostrzyn S.A.'s operations, products, and services, which impact the environment, have been identified based on a process map of the plant. Input data for each individual process was collected, and output data was defined, with particular attention to:

- emissions to air,
- discharges to water,
- waste management,
- soil contamination,
- use of natural resources,
- other issues related to the local environment and community.

An aspect is considered significant if it scores above a set criterion, taking into account:

- compliance with legal and regulatory requirements,
- the extent of environmental impact,
- the likelihood of exceeding emission limits/standards,
- the severity of the environmental impact,
- the exposure to environmental impact.

The most significant direct and indirect environmental aspects identified are:

- Pulp consumption (depletion of natural resources)
- Water consumption (depletion of natural resources)
- Gas consumption (depletion of natural resources)
- Paper mill effluent discharge (contamination of surface water and soil)
- Wastewater sludge (waste contamination)
- Improper waste and packaging management (waste contamination, biological hazard from wood pests, water and soil contamination)
- Electricity and heat consumption (depletion of natural resources)
- Potential chemical and oil leaks (water and soil contamination)
- Emission of dust and gases – carbon dioxide, sulphur oxides, nitrogen oxides, dust, F-gases (atmospheric air pollution, greenhouse effect)
- Potential gas explosion (air pollution, waste contamination)
- Fire (air pollution, waste contamination)
- Product and service design – implementation and validation (environmental contamination with waste, emergency situations) – preventive/supportive parameter
- Supervision of suppliers' environmental aspects (air pollution, waste contamination, water and soil contamination) – preventive/supportive parameter



# KEY INDICATORS

## NET PRODUCTION

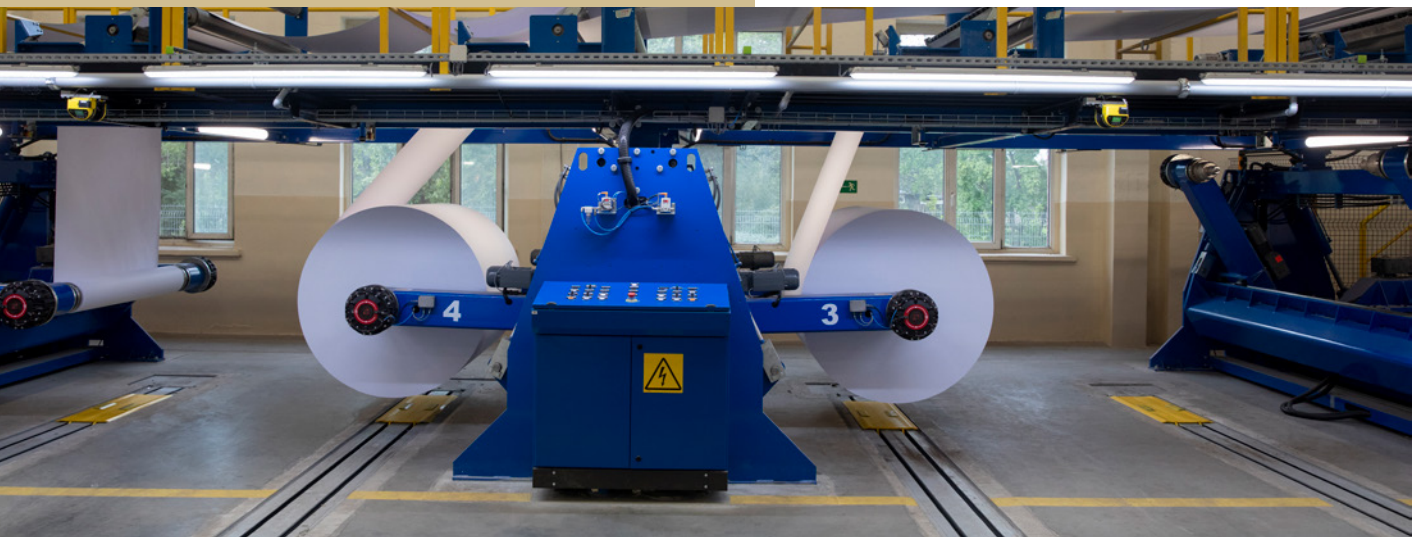
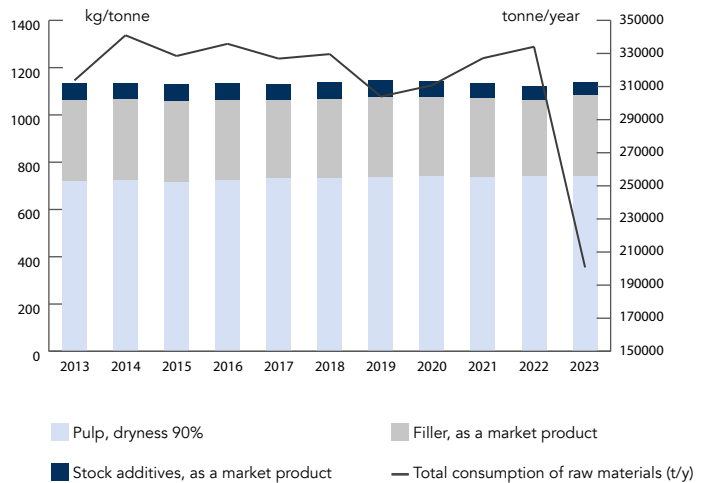
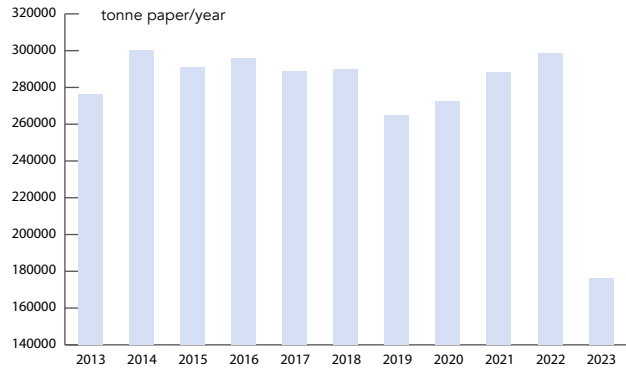
When describing the company's progress in environmental efficiency, an important aspect is the reference to net paper production. The net production shown in the chart is used to calculate the operational efficiency in terms of key indicators.

In 2023, due to a significant reduction in the effective working time of the production line while simultaneously maintaining process readiness, the unit environmental indicators worsened.

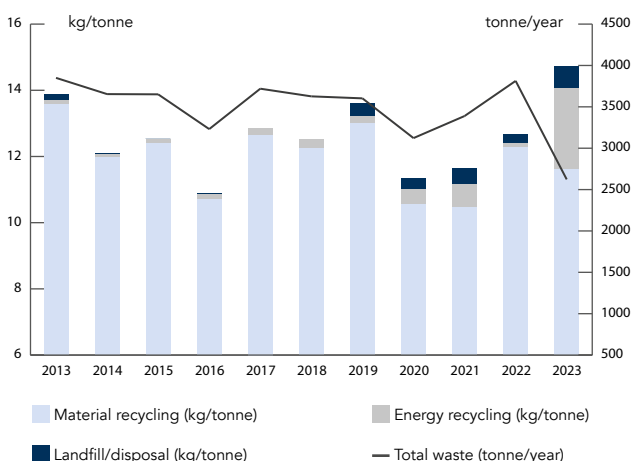
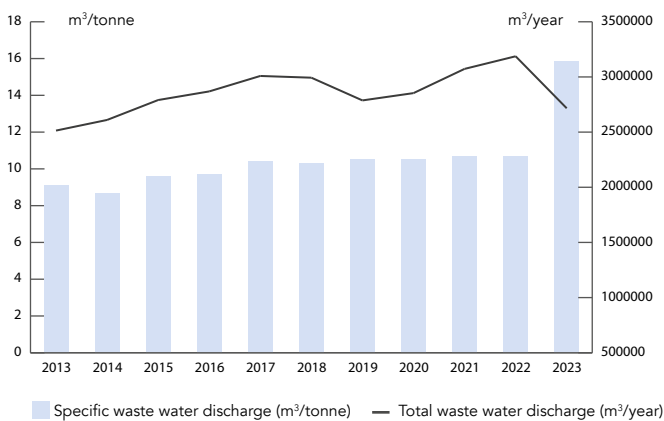
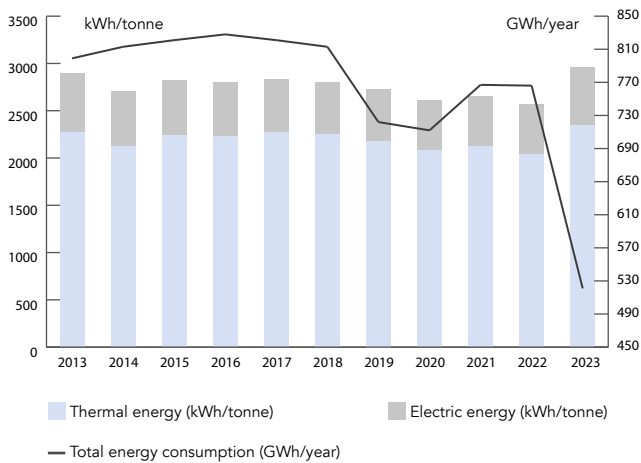
## MATERIAL EFFICIENCY

The main raw materials used in paper production include cellulose, filler, starch, and auxiliary substances. These materials are transported to the plant by sea, road, and rail.

For detailed figures regarding raw materials, please refer to page 9.



## KEY INDICATORS



### ENERGY EFFICIENCY

The most energy-intensive processes in paper production are steam generation and the operation of the paper machine drives, mills, and pumps. Steam is distributed to the cylinders where the paper is dried. The chart presents the total energy consumption and the breakdown between electrical and thermal energy.

For detailed consumption figures and main energy carriers, please refer to page 9. The increase in gas (thermal energy) consumption compared to last year is not due to a deterioration in the process but rather its inherent nature.

### WASTEWATER DISCHARGE

In paper production, water is used to dilute pulp into a fibrous mixture and transport it to the paper machine headbox. During the paper formation process on the paper machine, the pulp is dewatered. Most of the water is reused and recirculated within the paper mill. Water that isn't recirculated undergoes treatment at the plant's wastewater treatment facility. The amount of water used is measured as the wastewater leaving the plant after treatment.

For detailed figures on water consumption and wastewater discharge, please refer to page 9. The increase in consumption compared to last year isn't due to a deterioration in the process but rather its inherent nature.

### WASTE

The chart shows the amount of industrial waste relative to production. Whenever possible, waste is recycled. Non-recyclable waste is used for energy recovery or is disposed of in landfills/sent to a processing facility for disposal.

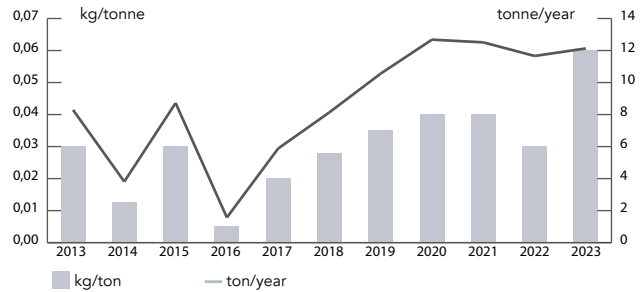
For detailed figures regarding waste, please refer to page 9.

# KEY INDICATORS

## EMISSIONS TO AIR

### SULPHUR DIOXIDE (SO<sub>2</sub>)

Sulphur dioxide is produced during the combustion of fuels containing sulphur, such as oil and coal. Sulphur dioxide contributes to the acidification of soil and water. (Fluctuations are due to measurement methodology. The values meet BAT requirements).



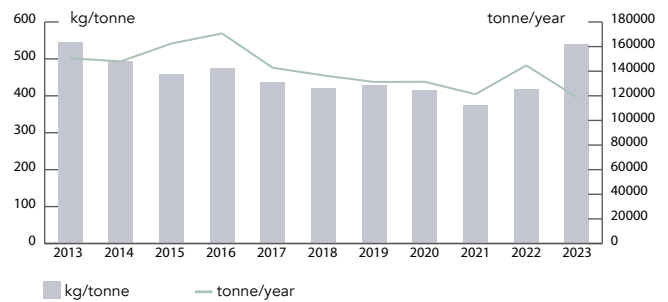
### NITROGEN OXIDES (NO<sub>x</sub>)

A collective term for nitrogen oxides produced during combustion, which can contribute to the acidification of soil and water.



### CARBON DIOXIDE (CO<sub>2</sub>) FROM FOSSIL FUELS

Carbon dioxide is produced when carbon compounds undergo complete combustion in an oxygen-rich atmosphere. The burning of fossil fuels increases the concentration of carbon dioxide in the atmosphere because the carbon released has been outside the natural cycle for a very long time. This rise in carbon dioxide levels is considered one of the factors contributing to global warming. In the long term, using renewable energy sources such as biofuels and hydroelectric power does not increase the carbon dioxide content in the atmosphere.

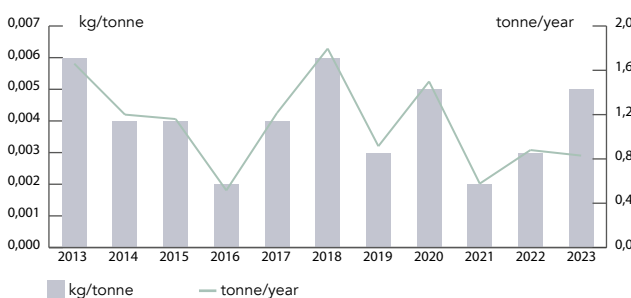
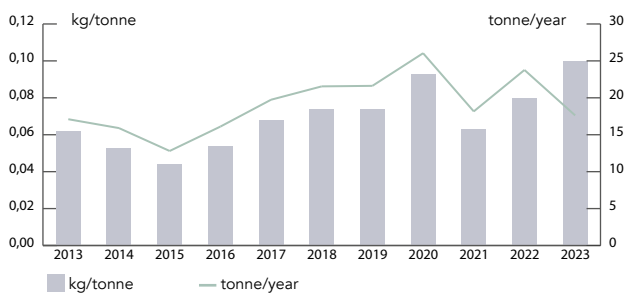
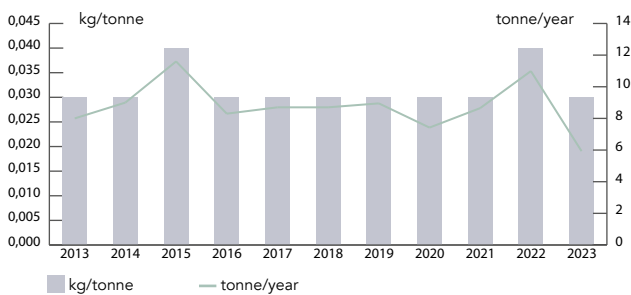
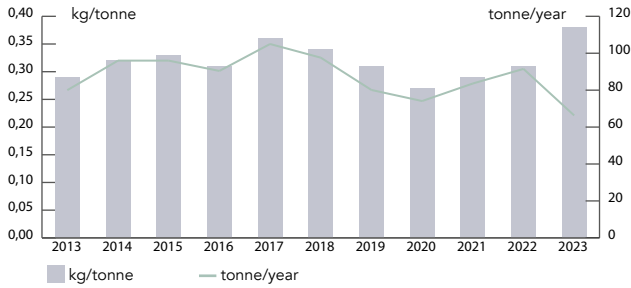


For detailed figures regarding emissions to the air, see page 9. The higher unit emissions of CO<sub>2</sub> compared to last year are not due to a deterioration in the process but rather its inherent nature.

*\*Since 2015, the emission indicators have referred exclusively to the energy consumed in our paper production facility.*

# KEY INDICATORS

## EMISSIONS TO WATER



### COD<sub>CR</sub>

**Chemical Oxygen Demand** – a measure of the amount of organic compounds in water that consume oxygen during decomposition.

For key parameters regarding wastewater discharge, please refer to page 9. The higher values compared to last year are not due to a deterioration in the process but rather its inherent nature.

### BOD5

**Biochemical Oxygen Demand** – a measure of the amount of oxygen consumed by microorganisms during the decomposition of organic substances in water over a five-day period.

### SUSPENDED SOLIDS (SS)

Suspended solids refer to fragments of fibres and other solid substances (e.g., filler) in wastewater; they cause water turbidity. Suspended solids hinder light penetration into the water, which reduces the growth of aquatic plants.

### NITROGEN (N)

A chemical element found in large quantities in the atmosphere. High levels of nitrogen compounds, along with phosphorus compounds and organic substances, can lead to increased organic activity in water, which in turn can cause the overgrowth of watercourses.

### PHOSPHORUS (P)

Phosphorus is a chemical element. High levels of phosphorus compounds, along with nitrogen compounds and organic substances, can lead to increased organic activity in water, which in turn can cause the overgrowth of watercourses.

## ACHIEVEMENT OF ENVIRONMENTAL GOALS 2023

	Goal	Project	Status
1	Minimising natural resource use by reducing potable water losses	Modernisation of the potable water network at APK S.A. – Stage 10	The network was expanded in the area of the tray factory construction. Two new potable water connections were made: one to the De-fibration Hall and one to the newly designed tray factory.
2	Minimising natural resource use by reducing hydrant water losses (from the Warta River)	Modernisation of the fire water network at APK S.A. – Stage 10	In the timber yard area, a section of the network was built alongside the construction of the photovoltaic farm, spanning a total length of 640 meters. Additionally, five new hydrants with valve nodes were installed.
3	Elimination of contamination risk in case of container leakage	Purchase and installation of racks adapted for storing 1000 l IBC chemical containers	Goal achieved in 100%, racks installed in the chemical warehouse, building 047.
4	Improvement of ventilation system efficiency in the PM hall – reduction of energy costs	Modernisation of ventilation unit no. 3 in the PM hall	Mechanical installation of the unit completed along with necessary replacement of air duct sections (progressive degradation – corrosion). The unit has been commissioned and activated – it's operating correctly according to the specifications.
5	Reduction of energy consumption, improvement of second-stage reactor performance	Replacement of the blower on the second stage of the WWTP	Blower has been delivered, installation and activation planned for July 2024



	<b>Goal</b>	<b>Project</b>	<b>Status</b>
6	<p>Reduction of monthly oil consumption in paper machines – continuation</p> <p>For PM1 &lt; 365 kg For PM2 &lt; 305 kg</p>	<p>Systematic removal of leakage points and causes, testing new sealing methods – continuation.</p>	<p>The goal has been achieved.</p> <p>Fresh oil top-ups to the central lubrication system of PM1 – 136,5 kg per month on average Fresh oil top-ups to the central lubrication system of PM2 – 151.7 kg per month on average</p>
7	<p>Reduction of energy costs for compressed air production</p>	<p>Purchase of a variable-speed ZR500 compressor to replace the two oldest, worn-out compressors (continuation)</p>	<p>The ZR500 compressor has been installed and commissioned. It is operating correctly. The compressor control software has been modified. We are monitoring the compressor's performance versus electrical energy consumption.</p>
8	<p>Adaptation of the wastewater sampling system to future new legal requirements</p>	<p>Replacement of the ASP2000 station with a new one – outlet no. 1 (continuation)</p>	<p>Completed. The ASP2000 station was installed and finally put into operation in April 2023. After parameterisation by Endress &amp; Hauser service, the station is operating correctly. Simultaneously, the measurement of wastewater flow discharged into the Warta River was launched. Thus, the latest legal requirements regarding wastewater discharge measurement have been met.</p>
9	<p>Reduction of noise emissions to the environment</p>	<p>Installation of acoustic insulation on air outlets from the production hall on the PM1 side</p>	<p>Completed. The differences in noise emission levels before and after silencing the emitters within the project scope, range from 8 dB to 9 dB (without the possibility of isolating background noise). The requirements specified in the Technical Conditions for Execution and Acceptance are considered met.</p>

## ENVIRONMENTAL GOALS 2024 AND ACTION PLAN

	Goal	Project	Planned effects
1	Minimise natural resource use by reducing hydrant water losses (from the Warta River)	Modernisation of the fire water network at APK S.A.  Stage 10 (from defibration to flat sections)	Maintaining water intake parameters below 100 m <sup>3</sup> /24h, despite the increasing average age of the water installation.
2	Increase efficiency of the MP1 heat recovery system (reduce energy costs)	PM1 Heat Recovery  Stage 3 Design phase	Reduction of fresh steam consumption in the modified recuperation section from approximately 5770 kg of steam per hour to 3150 kg of steam per hour, resulting in more efficient utilisation of waste heat.  Reduction of installed power from 194 kW to 120 kW (fans).
3	Minimise leaks and failures	Separation of combined sewer system at APK. Construction of a new PG-B social wastewater pumping station	1. The first phase of an investment aimed at reducing the amount of sanitary wastewater pumped to the municipal treatment plant and utilising rainwater in the production process. 2. Operational stability of the installation. 3. Improvement of health and safety conditions.
4	Optimise wastewater treatment process; standardise measurement equipment	Replacement of 2 sampling stations at WWTP with new ones – inlet to reactor 1; outlet from flotation	Obtaining reliable measurements of samples taken from the wastewater treatment process (improved sample quality – stored at 4°C), which will translate into proper control and management of the treatment process.

	<b>Goal</b>	<b>Project</b>	<b>Planned effects</b>
5	Reduce natural resource use by utilising excess warm water from the warm water tank (eliminate overflow to the channel)	Construction of an overflow pipeline from the warm water tank to the PM2 filtrate tank	Eliminating the discharge of warm/clean water into the sewage system, amounting to approximately 200 m <sup>3</sup> per month – reducing the volume of wastewater entering the biological treatment plant.
6	Eliminate coolant leaks; reduce electricity consumption	Modernisation of ventilation unit no. 1_PM1	Over the past 5 years, a total of 52 kg of R410a refrigerant has been replenished due to leaks. Due to its poor technical condition, the central unit operated at full capacity, but the output parameters of the air blown into the hall significantly deviated from the desired levels. This mode of operation caused frequent shutdowns and accelerated wear of the components.
7	Reduce steam consumption – limit heat losses	PSI Replacement of end dryer covers PM1 and 2	The values will be confirmed after the audit scheduled for August 2024.
8	Reduce electricity consumption on compressors	PSI Expansion of the compressed air system at APK	The estimated energy savings, based on the report, should be approximately 6.3 MWh per week.
9	Reduce electricity consumption (new pulpers)	PSI Modernisation of the defibration department	Reduction in installed power from 1,110 kW to 760 kW (based on the conceptual design).

# STATEMENT

## OF THE ENVIRONMENTAL VERIFIER REGARDING VERIFICATION AND VALIDATION ACTIVITIES

**TÜV NORD Polska Sp. z o.o.** with the environmental verifier registration number EMAS PL-V-0001, accredited in relation to the **NACE scope: 17.12** (NACE Code), declares that it has conducted verification to ascertain whether the Organisation mentioned in the updated Environmental Statement dated 07.06.2024:

**Arctic Paper Kostrzyn S.A.**  
**ul. Fabryczna 1**  
**PL/66-470 Kostrzyn nad Odrą**  
**registration number: PL 2.08.001-13**

meets all the requirements of Regulation (EC) No 1221/2009 of the European Parliament and of the Council of 25 November 2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS).

**By signing this declaration, I declare that:**

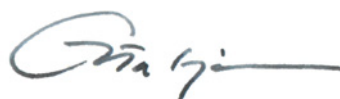
- / the verification and validation have been conducted in full compliance with the requirements of Regulation (EC) No 1221/2009;
- / the results of the verification and validation confirm that there is no evidence of non-compliance with applicable environmental legal requirements;
- / the data and information contained in the organisation's environmental statement provide a reliable, credible, and truthful representation of the organisation's activities within the scope specified in the environmental statement.

This document is not equivalent to EMAS registration. EMAS registration can only be carried out by the competent body under Regulation (EC) No 1221/2009. This document should not be used as a separate piece of information made available to the public.

I declare that the verification of compliance with the applicable requirements of Annexes I, II, III, and IV of Regulation (EC) No 1221/2009 was conducted based on the new contents of the Annexes specified in:

- / Commission Regulation (EU) 2017/1505 of 28 August 2017 amending Annexes I, II, and III to Regulation (EC) No 1221/2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS);
- / Commission Regulation (EU) 2018/2026 of 19 December 2018 amending Annex IV to Regulation (EC) No 1221/2009 on the voluntary participation by organisations in a Community eco-management and audit scheme (EMAS).

Statement No. EMAS/0240/2621/2024\_2  
Katowice, 31 July 2024



Grzegorz Tuleja  
Head of the Certification Body  
TUV NORD Polska Sp. z o.o.

TÜV NORD Polska Sp. z o.o.  
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# GLOSSARY

## **ACCREDITED COMPANY**

A company approved by an official institution to conduct specific analyses and control industrial processes.

## **BIOLOGICAL WASTEWATER TREATMENT**

A method of treating wastewater by using microorganisms to break down organic substances.

## **BLEACHING**

A method to increase the brightness of cellulose, for example. The bleaching process can use chemicals that are either elemental chlorine-free (ECF) or totally chlorine-free (TCF).

## **BOD5**

Biochemical Oxygen Demand over 5 days – the amount of oxygen required by microorganisms to decompose easily degradable organic compounds within five days.

## **CARBON DIOXIDE CO<sub>2</sub>**

A naturally occurring gas produced through biological degradation as well as the combustion of fuels.

## **CHEMICAL PULP**

A general term for sulphate and sulphite pulp, which is produced by chemically separating wood fibres from each other.

## **COD**

Chemical Oxygen Demand – the amount of oxygen required for the chemical breakdown of organic compounds present in water.

## **dB(A)**

Decibels A – a method of assessing noise intensity that takes into account human sensitivity to different sound frequencies.

## **EMAS**

Eco Management Audit Scheme. A system based on European Union regulations, associated with an audited and publicly available annual environmental report.

## **EUTROPHICATION**

Phosphorus (P) and nitrogen (N) are components of mineral salts that increase plankton growth in waters. Excessive amounts of these salts can cause rapid plankton growth, consuming all available oxygen.

## **FSC CERTIFIED RAW MATERIAL**

A raw material with a guarantee of origin (Forest Stewardship Council®), which excludes wood produced in violation of the five FSC principles (illegally harvested, in violation of customary rights, from forests with high conservation values, genetically modified, or from forests converted to plantations)

## **HAZARDOUS WASTE**

Waste that is particularly dangerous to the environment, such as certain chemicals, oils, used batteries, and electronic materials.

## **HIGH-QUALITY PAPER**

A general term for graphic papers, writing and printing paper, as well as certain technical and specialty papers.

## **ISO 14001**

An international standard for environmental management systems. A certificate is issued upon meeting the requirements of this standard.

## **MECHANICAL PULP**

Pulp produced by mechanically separating wood fibres from each other.

## **NITROGEN DIOXIDE, NO<sub>x</sub>**

A gas formed from nitrogen during combustion. It contributes to eutrophication.

## **OXYGEN-DEMANDING SUBSTANCES**

Substances contained in wastewater discharged into a receiver that reduce the amount of oxygen available to living organisms. Measured as COD and BOD5.

# GLOSARIUSZ

## **PERMISSIBLE VALUE**

A specified value, assigned by the Environmental Protection Authority, which must not be exceeded.

## **RECEIVER**

An environmental component to which emissions are directed, such as a river, sea, lake, or atmosphere.

## **SULPHUR DIOXIDE, SO<sub>2</sub>**

A gas produced during the combustion of fuels containing sulphur, causing acid rain.

## **SUSPENDED SOLIDS, SS**

Smaller fibre particles in wastewater, visible to the human eye, which cause water turbidity. Suspended solids hinder sunlight penetration into the water, reducing the growth of aquatic plants.

## **UNCOATED PAPER**

Paper without an additional layer or layers coating the paper surface, applied using dedicated mixtures and coating devices.



## CONTACTS

### FOR MORE INFORMATION OR TO ORDER ENVIRONMENTAL REPORTS:

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The Arctic Paper Kostrzyn S.A. environmental report is also available in Polish in both electronic and printed formats.

The next planned update will be published in the spring of next year.

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