

NETZSCH

Proven Excellence.



Environmental Protection and Energy Report 2024

Pumpen & Systeme GmbH, Waldkraiburg (Germany)

Pumps & Systems

ENVIRONMENTAL PROTECTION AND ENERGY REPORT 2024 NETZSCH PUMPEN & SYSTEME GMBH WALDKRAIBURG

Preface

Active environmental protection is one of the most important tasks of any modern company today. Sustainable business can only take place in an intact environment. Based on this deep conviction, our company already introduced an environmental management system in accordance with DIN EN ISO 14001 in 2015.

In addition, we successfully carried out an energy audit in accordance with DIN EN 16247-1 in 2016 and 2020. In the coming year, 2025 we will successfully implement certification in accordance with DIN EN ISO 50001. This aims to analyse energy consumption even better and track corresponding measures and programs to reduce consumption.

We are a partner of the VDMA's Blue Competence sustainability initiative and have been an ÖKOPROFIT company since 2006, as well as a member of the ÖKOPROFIT Club and the Bavarian Environmental Pact. With our partnership with Blue Competence, we are committed to complying with the twelve sustainability principles of mechanical and plant engineering.

Since 2018, we have been assessed annually by EcoVadis regarding our corporate social responsibility (CSR). In 2023, we were once again awarded the silver medal as the Pumps & Systems business division. The topic of CSR goes far beyond simple compliance with regulations. It deals with how companies deal with their economic and social impact on the environment and how they shape their relationship with their stakeholders (e.g. employees, trading partners, authorities).

Our environmental management is not limited to creating a healthy working environment for our employees. Rather, we are aware that our consumption of resources and energy must not be at the expense of future generations.

The Environmental and Energy Report 2024 systematically analyzes all environmentally relevant processes and consumption from previous financial years. Potential improvements and savings for energy and materials are continuously derived from this.

“Let us do everything in our power to leave the next generation – the children of today – with a world which offers them not only the necessary space to live, but also an environment that allows them to live and makes that life worth living”.

*Richard von Weizsäcker (*1920; †2015), German politician*

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OUR COMPANY

Development of the company

NETZSCH Pumps & Systems GmbH was founded in Waldkraiburg in 1962 and is the headquarters of the business unit of the same name. Under the management of Erich NETZSCH B.V. & Co. Holding KG, NETZSCH Pumps & Systems is, with approximately 2,500 employees, the largest business unit of the NETZSCH Group, along with NETZSCH Analyzing & Testing and NETZSCH Grinding & Dispersing. The company was founded in Selb in 1873 by the brothers Thomas and Christian Netzsch.

The NETZSCH Group is a medium-sized German company in mechanical, plant and instrument engineering with production, sales and service companies worldwide. The owner-managed company employs around 4,500 people worldwide.

In addition to the production site in Waldkraiburg, Germany, there are four other sites with their own production facilities in Brazil, China, India and the USA, as well as subsidiaries in Argentina, Australia, Austria, Belgium, Canada, Colombia, France, Great Britain, Indonesia, Italy, Kazakhstan, Malaysia, Mexico, the Netherlands, Poland, Singapore, Spain, South Africa, South Korea, Thailand, the United Arab Emirates, Vietnam and many other countries.

The Waldkraiburg site covers the entire value chain on campus. From design, development, production, assembly, tool and fixture construction to internal sales, worldwide shipping and service.

In June 2024, around 630 qualified employees were working on a production area of 63,000 m². Up to 120 pumps are produced in Waldkraiburg every day.

Plant consolidation at the Waldkraiburg site

With the plant merger, all buildings in Geretsrieder Straße were brought up to the current energy standard, which means that around 90 % of fossil fuels can now be saved.

We are currently in the restructuring phase of metal production with all machines and systems. Once this is complete, the tugger train will enable perfect delivery of goods to the campus.



PRODUCTS

In the almost seven decades of its existence, NETZSCH Pumpen & Systeme GmbH has developed from a machine manufacturer to a solution provider and offers a wide range of positive displacement pumps.



NEMO® PROGRESSING CAVITY PUMPS

The main product is the NEMO® pump, a rotating displacement pump. "NEMO®" is a registered trademark for NETZSCH and was formed from the name NETZSCH and the name of the inventor, Moineau. The versatile pump is used in almost all industrial applications.



TORNADO® ROTARY LOBE PUMPS

Industrial versions cover customer requirements in environmental technology, the chemical industry and many other industrial requirements, including agriculture. We also offer rotary lobe pumps in hygienic and aseptic designs for the food, pharmaceutical and chemical industries.



NOTOS® MULTI SCREW PUMPS

The NOTOS® multi screw pump family comprises three product series in different designs, which are suitable for numerous industrial sectors and applications.



PERIPRO® PERISTALTIC PUMPS

Robust, reliable, strong - PERIPRO® peristaltic pumps are particularly suitable for aggressive and abrasive media in a wide range of applications. With only one wearing part, maintenance costs are kept to a minimum.



NETZSCH grinder

The production program also includes grinding systems that can be integrated into the conveying flow (N.Mac® twin shaft grinders and M-Ovas® cutting plate macerators).



Dosing and barrel emptying systems

The application possibilities of the progressive cavity pump are considerably increased by the active distribution in container emptying systems and dosing systems.

NETZSCH pumps are built:

- for flow rates from a few cm³/min to 2500 m³/h
- for differential pressures up to 100 bar and system pressures up to 300 bar
- made of grey cast iron, austenitic and ferritic steel, Hastelloy®, titanium, copper alloys, zirconium, elastomers and plastics, etc.

Spare parts processes

Original spare parts are offered for all NETZSCH products - proof of our high level of vertical integration.

*Hastelloy® is a registered trademark of Haynes International Inc.

OUR ENVIRONMENTAL POLICY

Environmental, energy and sustainability policy

Environmental and energy management, as a mandatory pillar of sustainability, ensures the continuous improvement of our environmental performance, as well as energy efficiency and the conservation of natural resources. This is achieved on the basis of internal targets, guidelines and processes through the implementation of certified, documented management systems and by means of regular environmental and energy audits. Responsible action creates opportunities for sustainable development and counteracts climate change.

- **Energy consumption:**

We carry out regular energy audits to identify and prioritize potential savings. This is part of a systematic approach to improving energy efficiency. A metering concept is used to continuously monitor and optimize energy consumption and performance. Progress and challenges are communicated regularly.

- **Biodiversity:**

In order to promote biodiversity, suppliers with minimal environmental impact are selected. On our premises, we cultivate a diverse flower meadow, which provides a valuable refuge for reptiles and insects.

- **Water resources:**

Our objective is to provide effective protection and to ensure the careful management of water resources. We are committed to identifying and addressing risks associated with water-hazardous substances. Our focus is on developing efficient and sustainable water management solutions.

- **Waste managements:**

We separate residual materials properly and recycle as much as possible in order to reduce waste volumes as far as possible. In addition, we regularly review options and technologies for the further utilization of waste to generate energy.

- **Sustainable supply chain:**

We are fundamentally committed to aligning the procurement process with ISO 26000 "Guidance on social responsibility". When selecting suppliers, their energy efficiency and environmental practices are taken into account. As a market and technology leader, we take responsibility for a social, sustainable and long-term partnership with our suppliers to improve energy efficiency throughout the supply chain.

- **Social commitment:**

We bear responsibility in society and are involved in a wide range of social projects.

We at NETZSCH Pumpen & Systeme GmbH are certified in accordance with ISO 14001 and pursue our sustainability strategies in all our business areas. Aiming for DIN 50001 certification underpins our commitment to systematic energy management. We are guided by ISO 26000 and are committed to developing a sustainable future in accordance with the UN guidelines. Measures, targets and progress are regularly documented and communicated internally and externally.

FIGURES, DATA, FACTS

Noise

Noise emissions are regularly measured, controlled, and monitored by our company. This involves recording, totaling and evaluating all noise affecting a specific location.

The measurement results show that in some work areas, such as metal and elastomer technology, the average values determined are higher than the lower action value 80 dB(A). In our company, the noisy areas that reach or exceed the upper action value of 85 dB(A) are marked as noise areas. These areas are physically separated from the other work areas/halls. Our employees who work in noisy areas are obliged to wear personal hearing protection. As a special measure, employees who regularly work in noisy areas are provided with personalized hearing protection. For employees who only have to spend short periods of time in noisy areas, easily visible hearing protection dispensers are installed at various points.

No relevant noise emissions are emitted to the outside. There are currently no complaints about noise emission

Energy

Due to constantly rising energy prices and current climate protection targets, we are constantly confronted with the issue of energy efficiency. Energy efficiency offers us an opportunity to create win-win situations. Cost pressure is reduced, competitiveness is strengthened, and the environment and resource consumption are protected. Furthermore, CO₂ emissions are minimised.

As a result of the plant merger and the associated conversion of the heating system, we have already consumed 90 % less fossil fuels in 2024 than in the same period last year. We aim to phase out fossil fuels completely in the coming years.

FIGURES, DATA, FACTS

Energy consumption

In 2024, electricity consumption rose minimally following a decline in the previous year. This is mainly due to more powerful machines and advances in digitalization, which control many processes automatically and require energy. These developments underline the energy efficiency and innovative strength of our new assembly and office building.

Since 2022, we have been using only green electricity instead of conventional electricity, which has led to a significant reduction in our CO₂ emissions. We also generate our own sustainable electricity with our photovoltaic system, which has an output of around 520 kWp and covers around 8 % of our energy requirements.

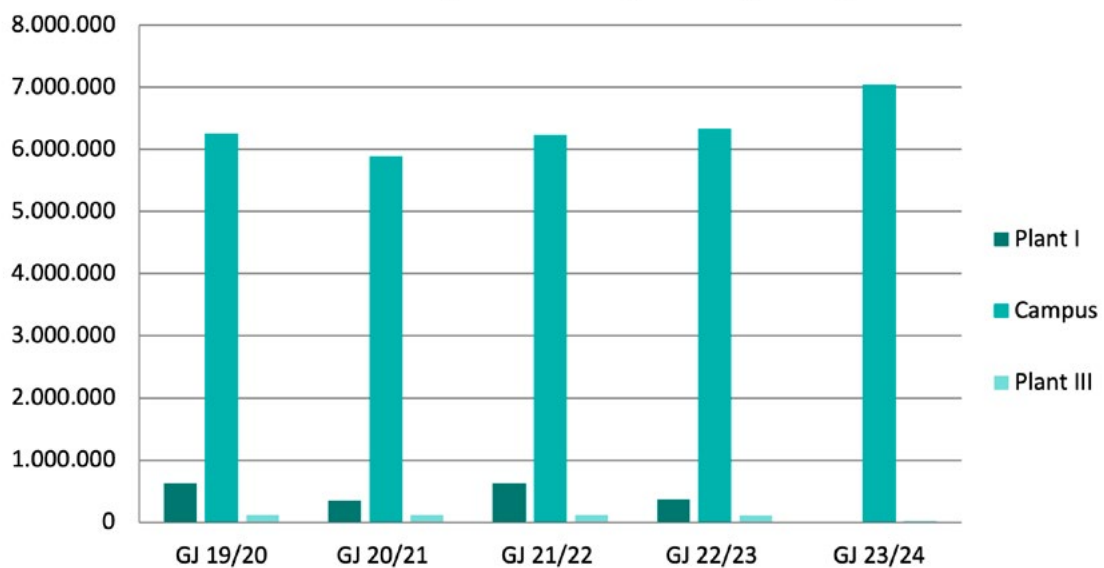
Total electricity consumption and CO₂ emissions

Electricity consumption (kWh)		
Financial year (July to June)	Electricity consumption in kWh/year	CO ₂ emissions in kg/year
21/22	6.975.996	1.155.017*
22/23	6.844.240	320.242*
23/24	7.072.213	330.909*

CO₂ emissions NETZSCH Waldkraiburg; Emission factors of Stadtwerke Waldkraiburg from the year 2023

* Purchase of green electricity since 01.01.2022

Electricity consumption (kWh)



* Status Jun 24

FIGURES, DATA, FACTS

Natural gas and wood chip consumption

Compared to previous years, we have significantly reduced our natural gas consumption. This reduction is primarily due to the introduction of our high-performance wood chip heating system with a capacity of 990 kW, which was installed on our factory premises at the end of 2022. In addition, we are using the benefits of groundwater to cool and heat the new building.

We will also use innovative solutions to optimize the process flow.

Total gas Consumption and CO₂ emissions

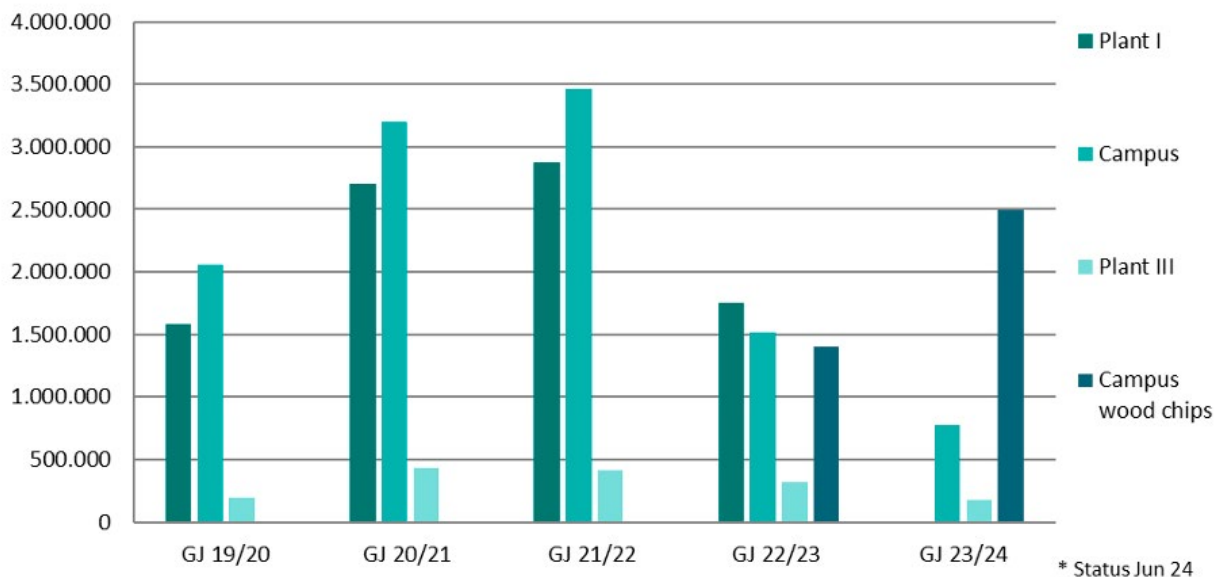
Gas consumption (kWh)		
Financial year	Gas consumption in kWh/year	CO ₂ emissions in kg/year
21/22	6.751.926	1.600.207
22/23	3.593.681	955.919
23/24	948.419	202.383

CO₂ emissions NETZSCH Waldkraiburg; emission factors of Stadtwerke Selb. From 2023 emission factors from Stadtwerke Waldkraiburg.

Wood chips consumption (kWh)		
Financial year	Gas consumption in m ³ /year	CO ₂ emissions in kg/year
22/23	1.400.000	22.561
23/24	2.491.050	40.144

CO₂ emissions NETZSCH Waldkraiburg; emission factors Bavarian State Office for the Environment (LfU)

Energy consumption and wood chips (kWh)



FIGURES, DATA, FACTS

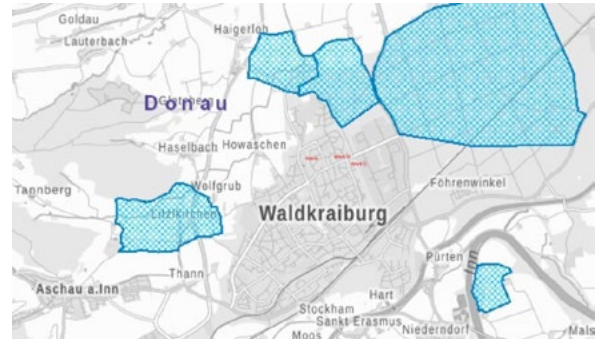
Water

Water consumption and wastewater quality

Water is an essential prerequisite for human, animal and plant life and an indispensable resource for the economy. There is no substitute for it, which is why effective protection and economical use of water are our common duty.

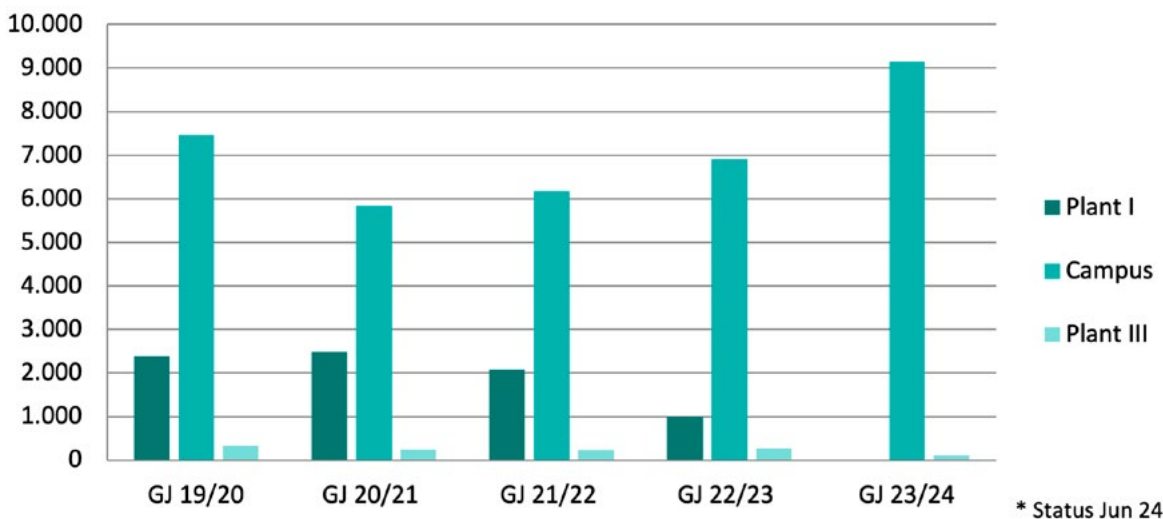
Our process water is monitored and, depending on the load (paint shop, cooling lubricants, etc.) is collected by specialist disposal companies or, in the case of permissible limit values (flood cleaning water, test stand water, etc.) with a discharge permit from the city, fed into the sewer system - and thus purified and returned to the water cycle.

Water consumption on campus amounted to approx. 9,143m³ in FY 23/24. The commissioning of the new pickling plant, the start-up of the degreasing plant, the complete filling of the cooling/heating system with water and a complete roof cleaning in 2023 contributed to the increased consumption. In addition, MET restructuring projects with temporary increases in water consumption will also affect us in the coming year.



The map shows that our plants are not located in a designated water protection zone.

Water consumption (m³)



FIGURES, DATA, FACTS

Air consumption

Compressed air campus electricity 260.333 kWh

The campus has a joint compressed air network for metal and elastomer technology with compressed air centres in both main areas. The compressors have a drive power of 18.5 kW, 25.75 kW, 32.8 kW and 37.75 kW. In 2024, approx. 11.500 total operating hours were achieved. The energy efficiency of the compressed air utilization can be rated as above average. A higher-level control system ensures the targeted activation and deactivation of the compressors, whose waste heat is fed back into the heating water circuit. Tours to detect leaks take place at the Campus once a year.

Waste volume

The volume of non-hazardous waste amounted to 1.324 tons in FY 23/24. Compared to the previous financial year, this represents a decrease of 1.5 %. Our metal recyclables, which are recycled, are included in this tonnage figure. The reduction in hazardous waste of 116 tons in FY 23/24 is very pleasing. Last year, this figure was 153 tons, which represents a reduction of over 25 %. In the future, too, it will be important to use raw materials, products and hazardous substances sparingly in order to protect the environment.



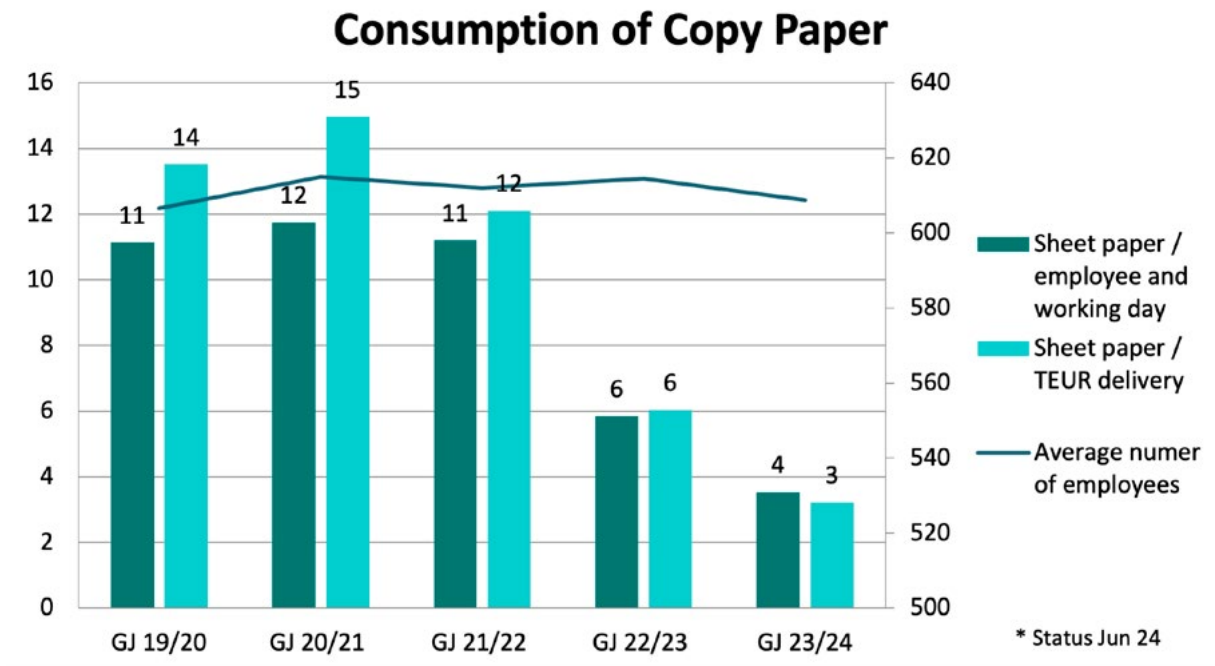
FIGURES, DATA, FACTS

Waste

Ways of avoiding and reducing waste: Consumption of copy paper

We have been continuously reducing our paper consumption for several years by promoting IT solutions and will continue our efforts in the future.

The “Going paperless” project was launched in 2021. The aim is to store all documents and files in digital form in future. We expect this to lead to a drastic reduction in paper in the coming years. One employee currently uses four sheets of paper per working day.



OUR ENVIRONMENTAL GOALS

Planning

Roadmap Environmental Protection NPS 2023		
Business year	Q1-Q2/23	Q3-Q4/23
<p>Activities: What will we do this 12 month?</p>	<p>Saving resources</p> <ul style="list-style-type: none"> ▪ Reduce waste volumes, energy consumption and emissions by approx. 5 % ▪ Training and sensitising our employees with regard to waste separation, energy efficiency and sustainability ▪ Reduction of the working materials in the building by approx. 10 % (currently over 400) ▪ Dispensing with fossil fuels ▪ Introducing the procurement of hazardous materials via SAP ▪ Recycle and reuse waste wood 	<p>System and managed optimizations</p> <ul style="list-style-type: none"> ▪ Maintaining and updating ETICOR, Sam Secova and the system's list of hazardous substances ▪ Auditing suppliers with environmental relevance and suppliers relevant to waste disposal ▪ Drive forward sustainability strategy and CCF/PCF calculation ▪ Carry out emergency management exercises (leakage emergency training with all employees, incident plan, emergency materials, reporting system, incidents) ▪ Introduce a new metering concept in order to record energy flows and consumption accurately ▪ Strengthen advertising measures via IGW and marketing
<p>KPI: How do we measure our success?</p>	<ul style="list-style-type: none"> ▪ Reduction of drinking water and energy consumption ▪ Avoidance, reduction, and proper sorting of waste volumes ▪ Accurate tracking of our consumption levels 	<ul style="list-style-type: none"> ▪ Increased transparency regarding environmental impacts ▪ More visible commitment in the environmental field ▪ Greater transparency about waste evaluation

IMPLEMENTED MEASURES

2016: Heating and cooling with groundwater

With the permission granted by the Mühldorf a. Inn District Office on 22/08/2016, we are allowed to extract groundwater for heating and cooling purposes and return the thermally used water to the groundwater. Heat is extracted from or added to the extracted groundwater as required and used to control the temperature of an oil tank for the pump test bench.

2018: Conversion to LED lighting in the mechanical production workshop

- Savings of 45.000 kWh per year
- Increase in the number of lux in the entire production area, approx. 20 % more
- No more cleaning of light screens required, cost savings of approx. 6000 €/a
- Battery capacity for emergency lighting currently still 33 % compared to previous requirements
- LED lighting lasts 20.000 – 50.000 hours, neon only 15 – 20.000 hours

2019: Conversion of wood disposal

Collection of wood waste in 15 m³ container skips, with a compaction of approx. 35 % - in 2019, around 110 tons of wood waste were removed. Previously, the entire volume of wood waste was transported over long distances to the disposal company. This resulted in a high freight frequency and high fuel consumption. By purchasing a wood compactor and switching to a local disposal company, CO₂ emissions have been greatly reduced.

2020: Flowering meadows

Creation and management of a species-rich flowering meadow, according to the specifications of the lower nature conservation authority and the landscape conservation association, with approx. 4500 m² in Plant III and approx. 3000 m² on the Campus on the NETZSCH site. The fallow strips thus became valuable retreats for insects.

2020: Changeover to press containers

- Paper and cardboard
- Energetic waste

The waste is highly compacted, which saves container emptying and journeys. This can significantly reduce CO₂ emissions.

2021: Changeover to chip disposal

Until now, loose metal chips with a cooling lubricant content of up to 14 % were collected in 20 m³ roll-off containers above a collection tray. Exposed to the weather, the trays had to be pumped out at regular intervals to ensure that the liquid did not escape.

Therefore, a system was procured in which chips are fed into a centrifuge via a chip crusher. There, the cooling lubricant is separated from the chips and stored separately in a tank. The chips are then pressed into briquettes in the briquette press and highly compacted. This eliminates the need to empty containers and thus reduces the number of trips, leading to a reduction in CO₂ emissions.

As the entire plant is now under the roof, rainwater will no longer be disposed of as coolant in future, and the amount of liquid to be disposed of will be drastically reduced.

2022: Heating and cooling with groundwater

A second well was drilled for the new building so that groundwater can be extracted for heating and cooling purposes. The water from the well is fed back into the borehole in a circuit via a heat pump. Heat is added to or extracted from the groundwater as required.

2022: Roof renovation of the MET Hall

The insulation renewed during the renovation of the roof of the MET hall can save 20 % of the annual gas consumption.

2022: Conversion to renewable energies

Installation of a photovoltaic system with an output of 520 kWp. This can now cover 8 % of our annual electricity consumption. The remaining 92 % of our electricity requirements have been covered by green electricity since 01.01.2022.

2023: Reduction of natural gas consumption

In order to be able to largely dispense with natural gas, a wood chip plant with 990KW was built on the factory premises at the end of 2022. The energy generated is to be used primarily for process heat. By moving from Plant I to the Campus, the basic consumption of natural gas was also reduced by 85 %.

2024: CSR Report

From 2025, retroactively for 2024, we as the NETZSCH Group are obliged to publish a sustainability report. However, we have set ourselves the goal of reporting as early as 2024, for the year 2023.

2025: District Heating Connection

In order to take a further step towards independence from fossil fuels, a district heating connection is to be installed at the Geretsrieder Straße Campus.

Conclusion

NETZSCH acts with foresight and sustainability in terms of environmental protection and energy. We will continue to protect the environment, create attractive jobs and be an exemplary company in all areas. For this reason, we will continue to expand and continuously improve our environmental and energy management system.

The owner-managed NETZSCH Group is a leading global technology company specializing in mechanical, plant and instrument engineering.

Under the management of Erich NETZSCH B.V. & Co. Holding KG, the company consists of the three business units Analyzing & Testing, Grinding & Dispersing and Pumps & Systems, which are geared towards specific industries and products. A worldwide sales and service network has guaranteed customer proximity and competent service since 1873.

The NETZSCH Business Unit Pumps & Systems offers NEMO® progressing cavity pumps, TORNADO® rotary lobe pumps, NOTOS® multi screw pumps, PERIPRO® peristaltic pumps, macerators/grinders, dosing technology and equipment that are custom built for challenging solutions for different applications globally.

Proven Excellence. ■

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