

# NETZSCH

Proven Excellence.



## Environmental Protection and Energy Report 2023

NETZSCH Pumps & Systems GmbH Waldkraiburg

Pumps & Systems

# ENVIRONMENTAL PROTECTION AND ENERGY REPORT 2023 NETZSCH PUMPS & SYSTEMS GMBH WALDKRAIBURG

## Preface

Active environmental protection is one of the priorities of any modern company today. Sustainable business activities can only take place in an intact environment. Based on this conviction, we already introduced an environmental management system per DIN EN ISO 14001 in 2015.

In 2016 and 2020, we successfully conducted an energy audit as per the German Energy Services Act (EDG-L), to allow for even better analysis of our energy consumption and for implementation of the appropriate measures to lower consumption.

We are partners of the Blue Competence sustainability initiative of the VDMA (German Mechanical Engineering Industry Association) and have been an ECOPROFIT company and a member of the ECOPROFIT Club and the Umweltpakt Bayern (Bavarian Environmental Alliance) since 2006. With our Blue Competence membership, we undertake to comply with the 12 sustainability principles of the mechanical engineering and plant engineering industry.

Since 2018, we have been assessed annually by EcoVadis on our Corporate Social Responsibility (CSR) and were awarded the Silver Medal in 2023. CSR goes well beyond simple compliance and looks at how companies manage their economic, social and environmental impacts, as well as how they relate to their stakeholders (e.g. employees, trading partners, government).

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.

This Environmental and Energy Report 2023 systematically analyses all environmentally relevant processes and consumption from previous business years. From this, opportunities for improvement and savings in energy and materials are continuously derived. The qualitative and quantitative recording and presentation of all environmental impairments are the prerequisites for the derivation of improvement measures.

***“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 Pumpen & Systeme GmbH was founded in Waldkraiburg in 1961. It is the head company of the division of the same name and grew out of the pump department at Gebrüder NETZSCH Maschinenfabrik. The parent company, Erich NETZSCH GmbH & Co. Holding KG, was founded as Gebrüder NETZSCH Maschinenfabrik (NETZSCH Brothers Machine Works) in Selb, Germany, in 1873.

The NETZSCH Group is a German medium-sized company in the field of manufacturing machinery and instrumentation with worldwide production, sales and service companies. The family-run company employs approx. 4500 people worldwide.

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

NETZSCH Pumpen & Systeme GmbH represents the entire value chain at its plants in Waldkraiburg. From design, development, manufacturing, assembly, tool and fixture construction to internal sales as well as worldwide shipping and service.

On an operating area of 82,000 sqm, around 600 qualified employees were engaged in June 2023. Up to 120 pumps are produced daily in Waldkraiburg.

## Plant consolidation at the Waldkraiburg site

The construction work on the site at Geretsrieder Straße is progressing. According to the status, completion is planned for the end of 2024. The consolidation of the previous three locations into one site was already completed in mid-2023.

With the consolidation of the facility, all buildings on Geretsrieder Straße were upgraded to the current energy standards, allowing for approximately 40% reduction in the use of fossil fuels.



# PRODUCTS

In the nearly seven decades since its foundation, NETZSCH Pumpen & Systeme GmbH has developed from a mechanical engineering company to a solution provider and offers a wide range of displacement pumps with four technologies.



## NEMO® PROGRESSING CAVITY PUMPS

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



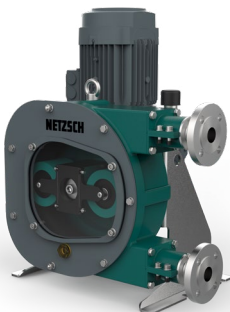
## TORNADO® ROTARY LOBE PUMPS

Industrial designs cover customer requirements of environmental technology and the chemical industry, along with many industrial and agricultural requirements. In addition to this, rotary lobe pumps are available in hygiene and aseptic versions for the food, pharma and chemical industries.



## NOTOS® MULTI SCREW PUMPS

The NOTOS® multi screw pump family covers three product series with various designs, which are suitable for numerous industry 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, minimal maintenance is required.



## NETZSCH grinder

Our production range also includes grinding machines that can be integrated into the product flow (N.Mac® twin-shaft grinders and M-Ovas® cutting plate grinders).



## Dosing and barrel emptying systems

The application possibilities of the eccentric screw pump are considerably increased by the active distribution in container emptying plants and dosing systems.

## NETZSCH pumps are built:

- for flow rates from a few cm<sup>3</sup>/ min up to 2500 m<sup>3</sup>/h
- for differential pressures up to 100 bar and system pressures up to 300 bar
- from grey-cast iron, austenitic and ferritic steel, Hastelloy®\*, titanium, Cu alloys, zirconium, elastomers, plastics, etc.

## Spare parts processes

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

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



# OUR ENVIRONMENTAL POLICY

## Environmental, energy and sustainability policy

The environmental and energy management, as a cornerstone of sustainability, ensures the continuous improvement of our environmental performance and the efficient use and preservation of natural resources. This realization is based on internal values, goals, guidelines, and processes through the implementation of certified, documented management systems and regular environmental audits. Responsible actions create opportunities for sustainable development and mitigate climate change.

- **Energy consumption:**

We intend to permanently save energy and promote renewable energies. We are committed to sustainable energy procurement and will reduce our gas consumption to zero before 2025.

- **Biodiversity:**

We respect legal regulations and avoid interventions in landscapes and ecosystems. We maintain a diverse wildflower meadow on our company premises, providing a valuable retreat for reptiles and insects.

- **Water resources:**

We aim for effective protection and careful use of water resources. We pay attention to risks posed by water-hazardous substances. Our focus is on efficient, sustainable water management.

- **Waste managements:**

We properly separate residual materials and recycle as much as possible to minimize waste quantities. By choosing qualified disposal companies, we ensure the proper disposal of hazardous waste.

- **Sustainable supply chain:**

We are committed to aligning the procurement process with ISO 26000 „Guidance on Social Responsibility.“ As a market and technology leader, we take responsibility for a social, sustainable, and long-term partnership with our suppliers.

- **Social commitment:**

We see ourselves as part of the community and are committed to promoting prosperity, health and the common good.

We, NETZSCH Pumpen & Systeme GmbH, are certified according to ISO 14001 and pursue our sustainability strategies in all our business areas. We align ourselves with ISO 26000 and commit to the development of a sustainable future in accordance with UN guidelines.

# FIGURES, DATA, FACTS

## Noise

Noise emissions are regularly measured, checked and monitored at our company. In this process, all sounds affecting a specific location are recorded, summed and evaluated.

The measurement results show that in some working areas, such as in metal and elastomer technology, the average values determined are higher than the lower trigger 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 spatially separated from the other work areas/halls. Our workers who are employed in noisy areas are obliged to wear personal hearing protection. As a special measure, personally fitted hearing protection is provided to workers who are regularly employed in the noisy area. For workers who only need to be in noise areas for short periods of time, easy visible hearing protection dispensers are located at various points.

No relevant noise emissions are emitted to the outside. Currently no complaints about noise emissions have been registered.

## Energy

Due to continuously rising energy prices and current climate protection goals, we are constantly faced with the issue of energy efficiency. Energy efficiency provides us with an opportunity to create win-win situations. Cost pressures are reduced, competitiveness is strengthened, and the environment, as well as resource consumption, is preserved. Additionally, CO<sub>2</sub> emissions are minimized.

Due to the consolidation of the facility and the associated transition of the heating system, we have already consumed 33% less fossil fuels in 2023 compared to the previous year. A complete phase-out of fossil fuels is planned by 2025.



# FIGURES, DATA, FACTS

## Electricity consumption

Compared to the previous year, the total electricity consumption of all facilities has remained constant. With the elimination of production and the administrative building at Plant I, we have seen a decrease in electricity consumption. Since January of this year, we have been residing and working in the new building, yet electricity consumption has only slightly increased. This demonstrates how energy-efficient and innovative the new assembly/office building is.

Since the beginning of 2022, we have been using green energy (Ökostrom) instead of conventional electricity. This change has resulted in a significant reduction in our CO<sub>2</sub> emissions. Additionally, through our installed photovoltaic system with a capacity of approximately 520 kWp, we generate our own electricity, covering about 8% of our needs.

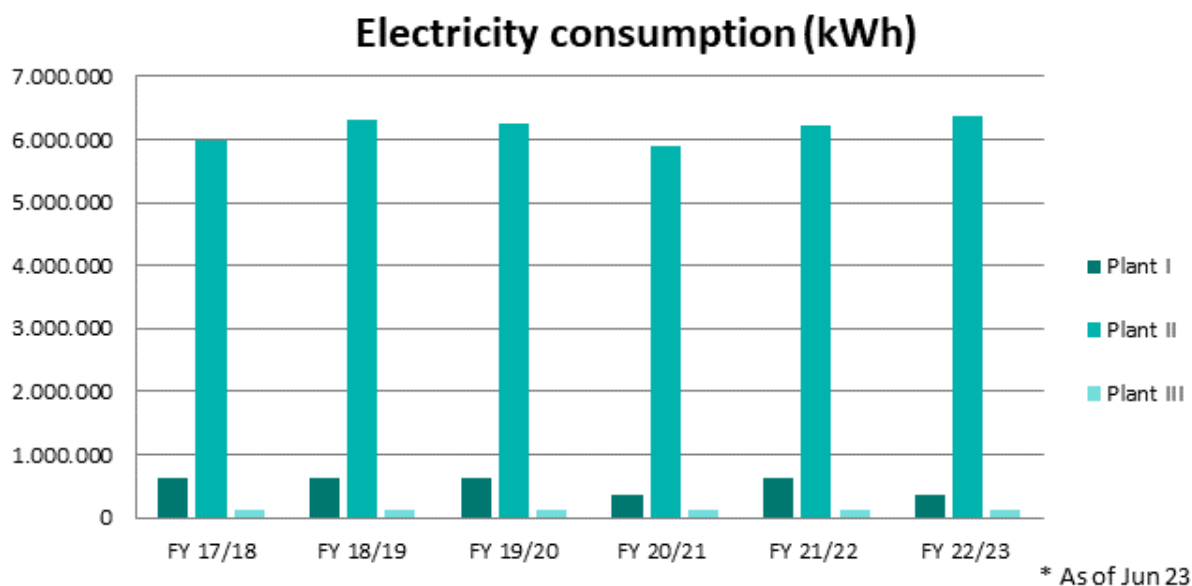
## Total electricity consumption and CO<sub>2</sub> emissions

Electricity consumption(kWh)		
Financial year (July to June)	Electricity consumption in kWh/year	CO <sub>2</sub> emissions in kg/year
17/18	6.711.403	2.651.005*
18/19	7.033.237	2.778.128*
19/20	7.003.092	3.654.503
20/21	6.359.847	2.974.209
21/22	6.975.996	1.155.017**
22/23	6.850.612	320.540**

CO<sub>2</sub> emissions NETZSCH Waldkraiburg; Emission factors by Stadtwerke Selb

\* Used emission factors from 2019 as no earlier values were available

\*\* Purchase of green electricity since 01.01.2022



# FIGURES, DATA, FACTS

## Gas consumption

Compared to previous years, our consumption of natural gas has significantly decreased. We were able to achieve this reduction primarily thanks to our wood chip heating system with 990 kW, which was implemented on the factory premises at the end of 2022. In addition, we use groundwater for cooling and heating in the new building.

Furthermore, we will optimize the process workflow through innovative solutions.

## Total gas Consumption and CO<sub>2</sub> emissions

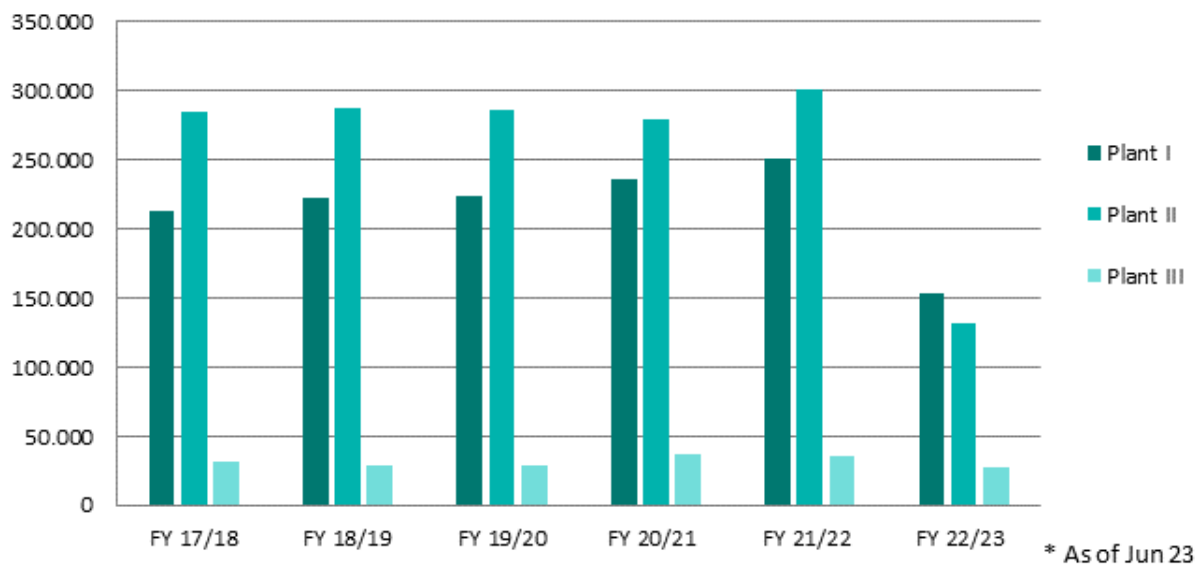
Gas consumption (m <sup>3</sup> )		
Financial year	Gas consumption in m <sup>3</sup> /year	CO <sub>2</sub> emissions in kg/year
17/18	529.747	122.584*
18/19	537.736	124.433*
19/20	538.370	126.648
20/21	551.476	130.901
21/22	587.124	139.148
22/23	312.494	83.124**

CO<sub>2</sub> emissions NETZSCH Waldkraiburg; Emission factors by Stadtwerke Selb

\* Used emission factors from 2019 as no earlier values were available

\*\* Emission factors from 2022

## Natural gas consumption (m<sup>3</sup>)



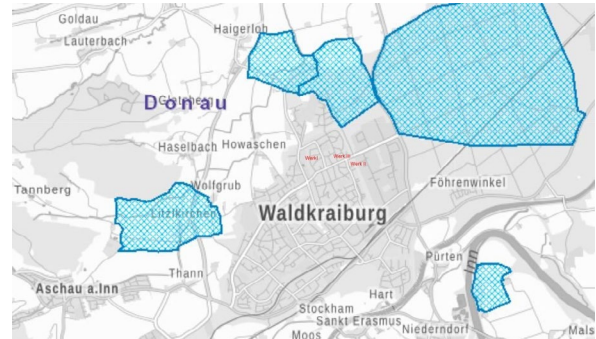
# FIGURES, DATA, FACTS

## Water consumption and wastewater quality

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

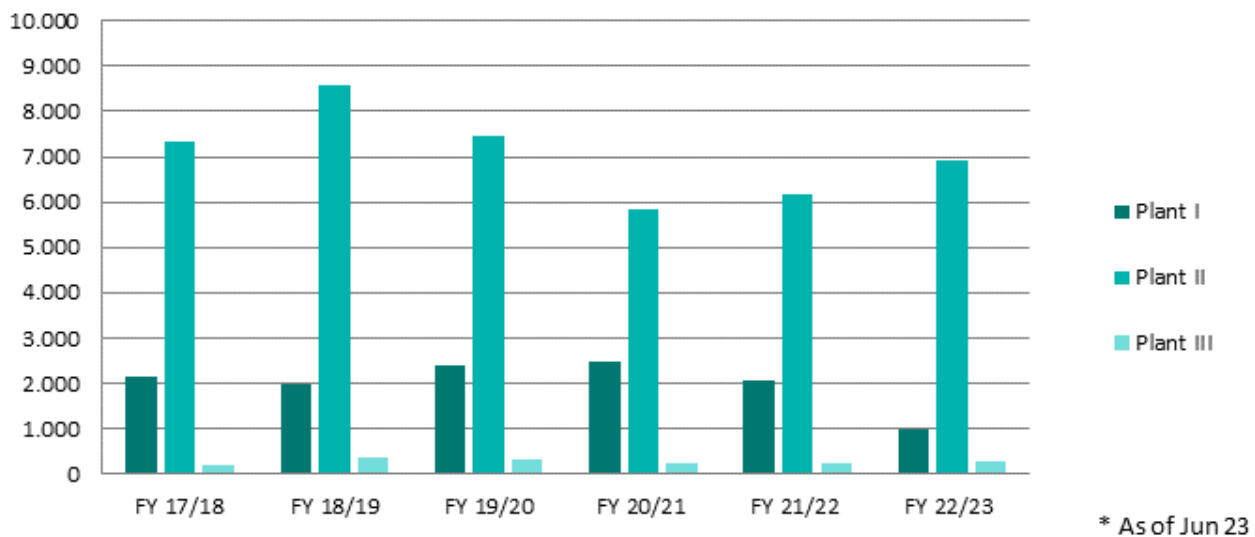
Our process water is monitored and, according to the contamination load (e.g. paint shop, cutting fluids), collected by specialist disposal firms or in the case of permissible limit values (e.g. flood cleaning water, test bed water), it is fed into the sewer system with a discharge permit from the city – and thus clarified and returned to the water cycle.

The cumulative water consumption across all three facilities has remained similar compared to the previous year. Savings at Plant II were achieved through the temporary closure of the cafeteria. The removal of the old wet painting system and the reduction of washing processes in the service workshop area at Plant I also contributed to a decrease. On the other hand, we have some ongoing construction or expansion projects on the campus, which caused an increase in water consumption on Geretsrieder Straße.



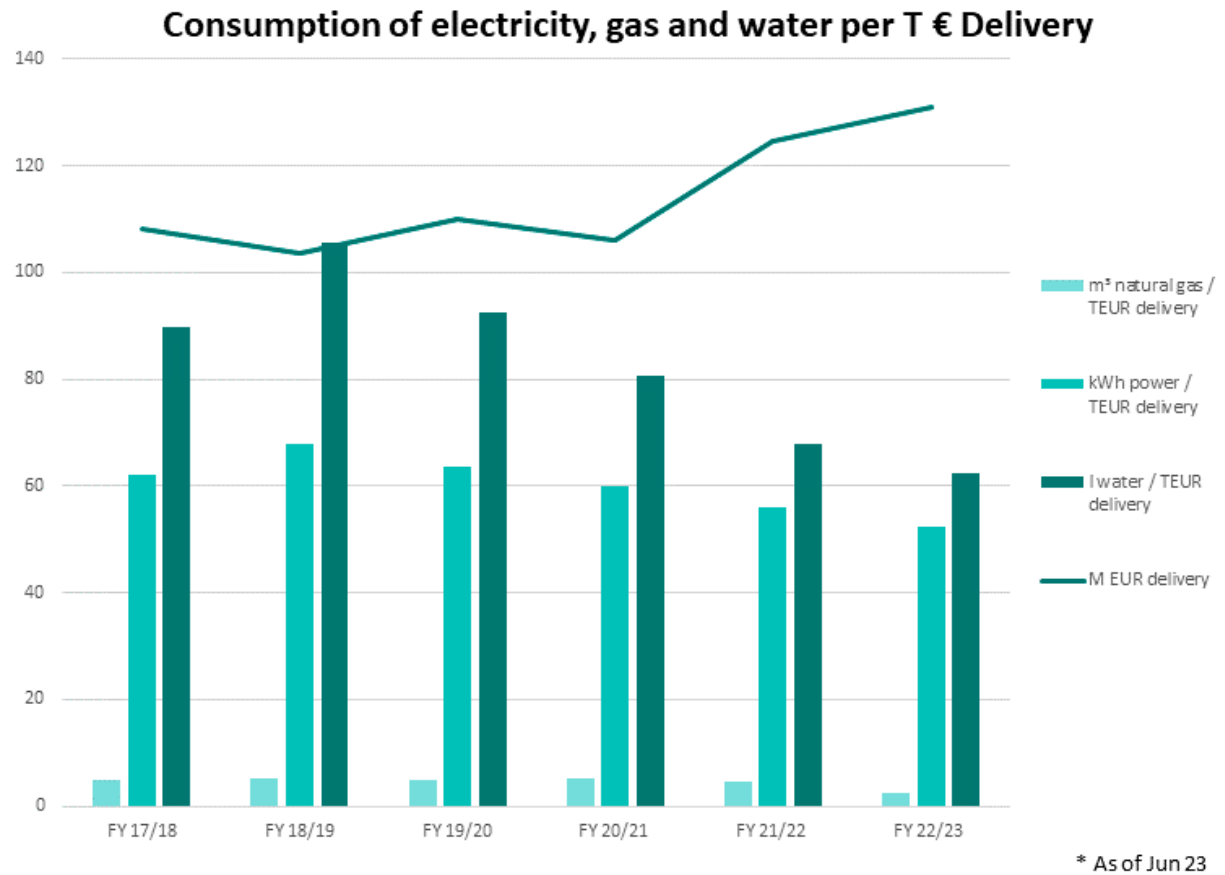
The map shows that our plants are not located in a designated water protection zone.

## Water consumption (m³)



# FIGURES, DATA, FACTS

Consumption of electricity, natural gas and water in total across all three plants in relation to shipments





# FIGURES, DATA, FACTS

## Air consumption

### Compressed air Plant I electricity 11.250 kWh

Since it is no longer possible to read the compressor due to the demolition of Plant I, this is an estimated value. Compressed air is generated using a compressor with a 7.5 kW drive power. Inspections to identify leaks in the compressed air network are conducted once a year.

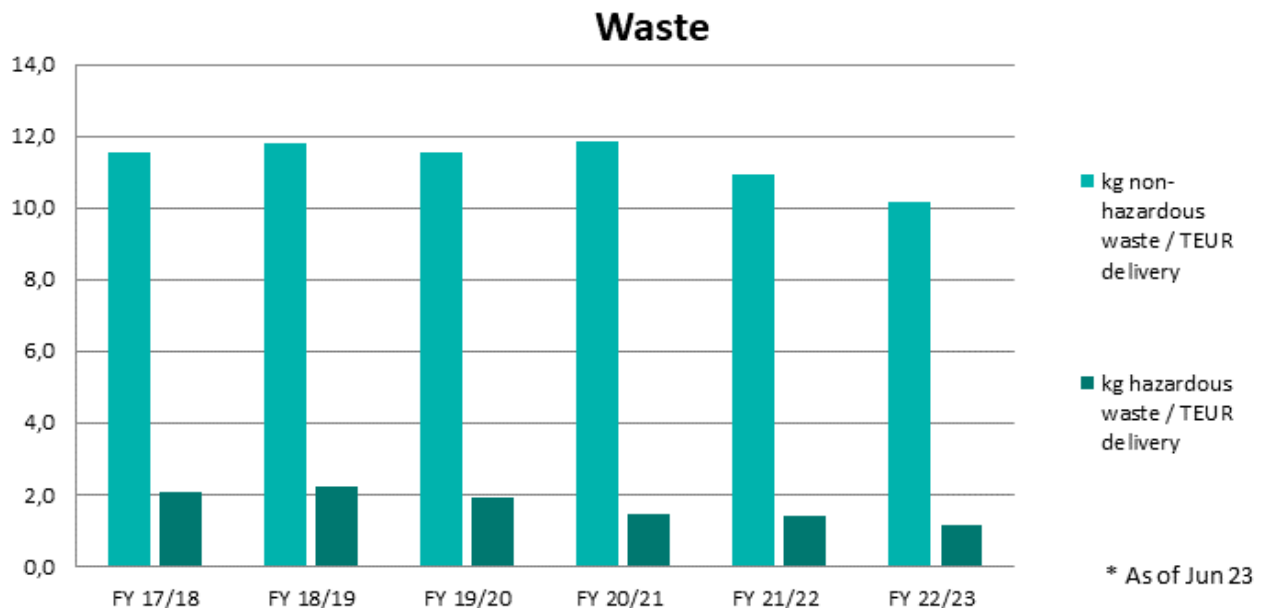
### Compressed air Plant II electricity 268.711 kWh

In Plant II, there is a shared compressed air network for both metal and elastomer technology, with compressed air stations in both main areas. The compressors have drive powers of 18.5 kW, 25.75 kW, 32.8 kW, and 37.75 kW. Approximately 11,500 total operating hours were recorded in 2023. The energy efficiency of compressed air usage can be considered exceptionally high. An overarching control system ensures the deliberate activation and deactivation of the compressors, with their waste heat being reintroduced into the heating water circuit. Leak detection rounds are conducted annually, as in Plant II.

## Waste

### Waste volumes

There is a slight decrease in both hazardous and non-hazardous waste. However, it is unfortunate that disposal costs have increased by approximately 16% compared to the previous year, despite the proper separation of waste. The reason for this increase is the rising costs of transportation, disposal, and energy. Without the proper separation and the careful use of raw materials and auxiliary substances, the increased costs would have been much higher. In the future, it is also important to use resources, products, and hazardous substances sparingly to protect the environment and keep costs as low as possible.



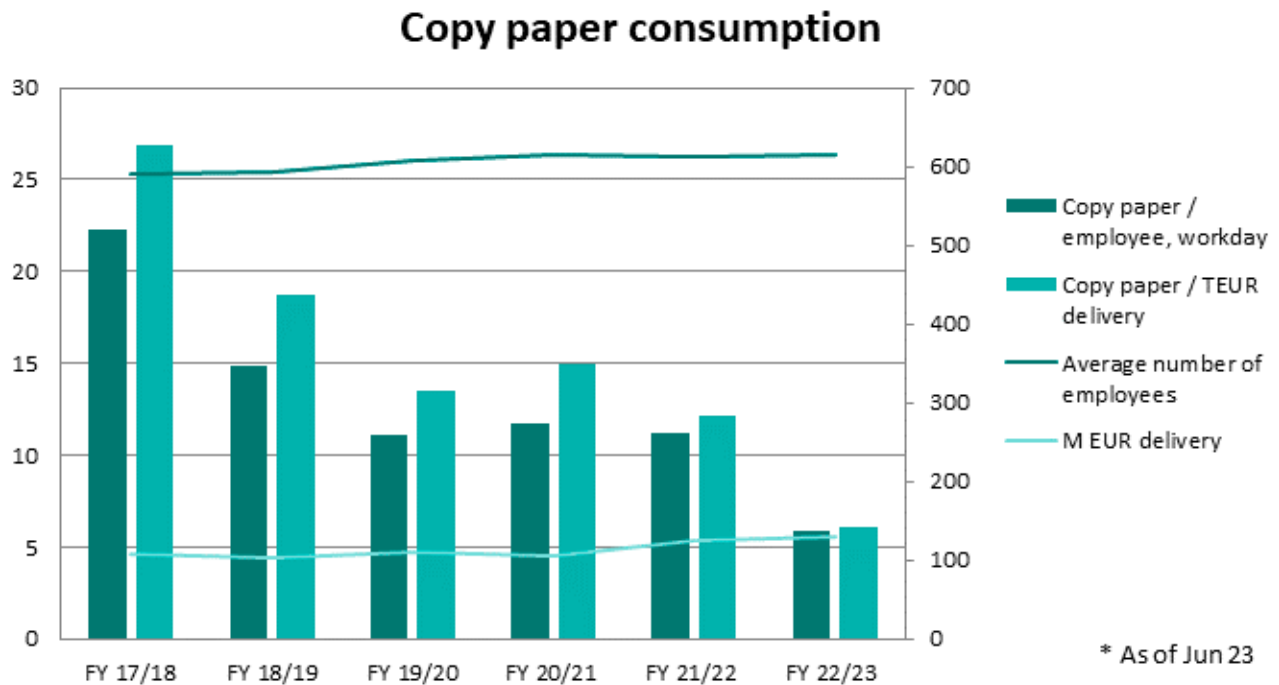
# FIGURES, DATA, FACTS

## Waste

### Possibilities for waste avoidance or reduction: consumption of copy paper

For several years, we have been continuously reducing our paper consumption by pushing IT solutions. We will continue our efforts in the future.

In 2021, we launched the project „Going paperless“. The aim is to store all documents and files in digital form in the future. As a result, we expect a drastic reduction of paper in the coming years.



# OUR ENVIRONMENTAL GOALS

Roadmap Environmental Protection NPS 2023		
Business year	Q1-Q2/23	Q3-Q4/23
Activities: What will we do this 12 month?	<p><b>Saving resources</b></p> <ul style="list-style-type: none"> <li>▪ Reducing the generated waste volumes, energy consumption, and emissions by approximately 5%</li> <li>▪ Training and raising awareness among our employees regarding waste separation and sustainability</li> <li>▪ Decreasing plastic waste by eliminating coffee vending machines and plastic coffee cups</li> <li>▪ Reducing in-house materials by approximately 10% (currently over 400)</li> <li>▪ Phasing out the use of fossil fuels</li> <li>▪ Implementing hazardous substance management through SAP</li> <li>▪ Introducing a new metering concept to better track energy consumption</li> </ul>	<p><b>System and managed optimizations</b></p> <ul style="list-style-type: none"> <li>▪ Maintaining and caring for GEORG, Sam Secova, and the hazardous substance list in the system</li> <li>▪ Auditing suppliers with environmental relevance and those relevant to disposal</li> <li>▪ Advancing sustainability strategy and PCF (Product Carbon Footprint) calculation</li> <li>▪ Reviewing and potentially optimizing emergency management (leakage emergency training for all employees, incident response plan, emergency materials, reporting system, incidents)</li> <li>▪ Ensuring compliance with REACH and SVHC guidelines</li> <li>▪ Strengthening promotional efforts through IGW (Internal Green Workplace) and marketing</li> <li>▪ Developing a concept for rainwater utilization</li> </ul>
KPI: How do we measure our success?	<ul style="list-style-type: none"> <li>▪ Reduction of drinking water and energy consumption</li> <li>▪ Avoidance, reduction, and proper sorting of waste volumes</li> <li>▪ Accurate tracking of our consumption levels</li> </ul>	<ul style="list-style-type: none"> <li>▪ Increased transparency regarding environmental impacts</li> <li>▪ More visible commitment in the environmental field</li> <li>▪ Greater transparency regarding waste analysis</li> </ul>

# IMPLEMENTED MEASURES

## 2016: Heating and cooling with groundwater

With permission of 22/08/2016, by the district office Mühldorf a. Inn, we are allowed to extract groundwater for heating and cooling purposes and to return the thermally used water into the groundwater. Heat is extracted from or added to the extracted groundwater as required and used to temper 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 of illuminance in the entire production area, approx. 20% more illuminance
- No more cleaning of lamp shades required, cost savings of approx. 6000 EUR/a
- Battery capacity for emergency lighting currently only 33% of previous requirement
- LED lighting lasts for 20,000 – 50,000 hours, neon lasts only for 15,000 – 20,000 hours

## 2019: Conversion of wood disposal

Collection of wood waste in 15 m<sup>3</sup> container dumpsters, with a compaction of about 35% – in 2019, about 110 tons of wood waste were taken away. Previously, wood waste with its entire volume was transported over a long distance to the disposal company which resulted in a high freight frequency and fuel consumption. By purchasing a wood compactor and switching to a disposal company, CO<sub>2</sub> emissions were greatly reduced.

## 2020: Flowering meadows

Creation and maintenance of a biodiverse flowering meadow, according to the specification of the local nature protection authority and the Landscape Conservation Association, with approx. 4500 m<sup>2</sup> at Plant III and approx. 3000 m<sup>2</sup> at Plant II on the NETZSCH site. The fallow land turned into a valuable refuge 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 CO<sub>2</sub> emissions.

## 2021: Changeover to chip disposal

Until now, loose metal chips with a cooling lubricant content of up to 14% were collected in 20m<sup>3</sup> roll-off containers above a collection tray. Exposed to the weather, the tubs had to be pumped out at regular intervals to ensure that no leakage of the liquid occurred. Therefore, a system was procured in which chips pass through a chip pass through a chip crusher into a centrifuge. There, the coolant is collected separately from the chips and stored separately in a tank. The chips are then pressed into briquettes in the briquetting press and strongly compressed. This saves container emptying and thus journeys. As a result, CO<sub>2</sub> emissions are reduced. Due to the fact that the entire plant is now covered by a roof, no more rainwater will be disposed of as coolant in the future and the amount of liquid to be disposed of will be dramatically 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. Depending on demand, heat is supplied to or extracted from the groundwater.

### 2022: Roof renovation of the MET Hall

Renovation of the roof of the MET Hall. Due to the new insulation, gas can be saved in the amount of 20%.

### 2022: Conversion to renewable energies

Installing 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 needs are covered by green electricity since 01.01.2022.

### 2023: Reduction of natural gas consumption

To significantly reduce our reliance on natural gas, a wood chip heating system with a capacity of 990 kW was installed on the factory premises at the end of 2022. The energy generated from this system is primarily intended for process heat. Additionally, by consolidating Plant I into Plant II, the base consumption of natural gas was further reduced by 33%.

### 2024: CSR Report


Starting from 2025, retroactively for 2024, we, as the NETZSCH Group, are obligated to publish a sustainability report. However, our goal is to report for the year 2023 already in 2024.

### 2025: District Heating Connection

To take another step towards reducing our dependence on fossil fuels, a district heating connection will be installed on the campus at Geretsrieder Straße.

## Conclusion

NETZSCH acts in a forward-looking and sustainable manner with regard to 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 the environmental and energy management system.



The NETZSCH Group is an owner-managed, international technology company with headquarters in Germany. The Business Units Analyzing & Testing, Grinding & Dispersing and Pumps & Systems represent customized solutions at the highest level. More than 4,500 employees in 36 countries and a worldwide sales and service network ensure customer proximity and competent service.

Our performance standards are high. We promise our customers Proven Excellence – exceptional performance in everything we do, proven time and again 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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