

NETZSCH

Proven Excellence.



Environmental Protection and Energy Report 2022

NETZSCH Pumps & Systems GmbH Waldkraiburg

Pumps & Systems

ENVIRONMENTAL PROTECTION AND ENERGY REPORT 2022 NETZSCH PUMPS & SYSTEMS GMBH WALDKRAIBURG

Preface

Active environmental protection is one of the priorities at 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 as per DIN EN ISO 14001 in 2015.

In 2016, 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 2022. 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 2022 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 prerequisite 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 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. 4000 people worldwide.

NETZSCH Pumpen & Systeme GmbH is the head company of the division of the same name. 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 2022. Up to 120 pumps are produced daily in Waldkraiburg.

Plant consolidation at the Waldkraiburg site

New construction work is progressing on the Geretsrieder Straße site. According to the status, completion and consolidation of the plant is planned for mid-2023. With the plant consolidation, we will bring all buildings in Geretsrieder Straße up to the current energy standard and thus save about 40% of our 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 cm³/ min up to 2500 m³/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

Environmental and energy management as a supporting pillar of sustainability ensures the continuous improvement of our environmental performance, as well as the efficient use and conservation of natural resources. This is realized based on internal values, goals, guidelines and processes, through the implementation of certified documented management systems and by means of regular environmental audits. A progressive, innovative, livable and open sense of responsibility creates opportunities for sustainable development.

- **Energy consumption:**

We intend to save energy permanently and promote renewable energies. We focused on sustainable energy procurement and aim to manage our gas consumption towards zero by 2025.

- **Biodiversity:**

We respect legal regulations and avoid interfering with landscapes and ecosystems. For example, we manage a species-rich flowering meadow on our company premises, thus providing a valuable refuge for reptiles and insects.

- **Water resources:**

We aim to effectively protect and conserve water resources. We are committed to respecting all risks posed by substances hazardous to water. Our focus is on efficient, sustainable water management.

- **Waste managements:**

We separate waste properly and replace as much as possible to reduce waste volumes as much as possible. By choosing qualified disposal companies, we ensure proper disposal of our hazardous waste.

- **Sustainable supply chain:**

We set basic contractual requirements for our suppliers and subcontractors regarding their responsibility towards their stakeholders and the environment. We strive, together with all partners involved, to protect people's rights and the environment.

- **Social commitment:**

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

We as NETZSCH Pumps & Systems in Waldkraiburg are certified according to ISO 14001 and pursue our sustainability strategies in all our business areas. We are guided by ISO 26000, the guide to social responsibility, and are committed to contributing to the development of a sustainable future in accordance with the 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 enormously 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 the consumption of resources are conserved. Furthermore, CO² emissions are minimized.

As a result of the plant amalgamation and the associated conversion of the heating system, we will already be using 33% less fossil fuels in 2023 than in the previous year. A complete phase-out of fossil fuels is planned by 2025.

FIGURES, DATA, FACTS

Electricity consumption

Increases in production also lead to an increase in electricity consumption. However, the proportional increase was greatly reduced by various measures.

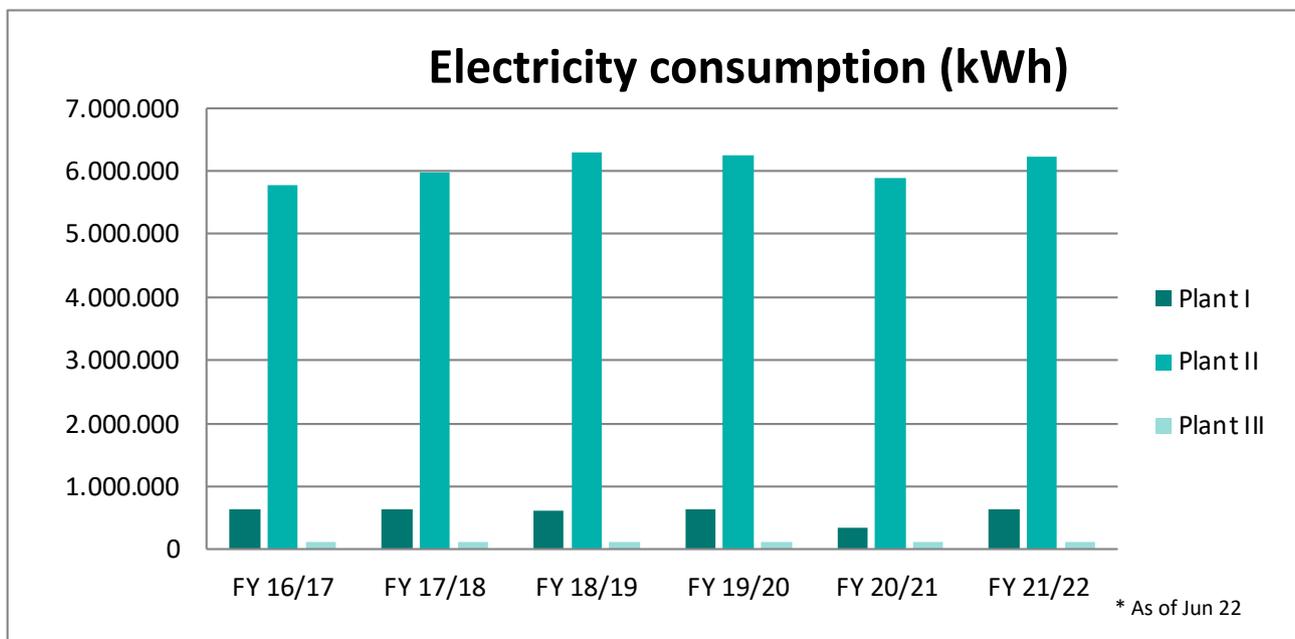
At the beginning of the year, we switched from conventional electricity to green electricity. In addition, we now produce our own electricity through our newly installed photovoltaic system, with an output of about 520 kWp, and thus cover about 8% of our needs.

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
16/17	6.519.701	2.620.920
17/18	6.711.403	2.697.984
18/19	7.033.237	2.807.361
19/20	7.003.092	2.815.243
20/21	6.330.491	2.544.857
21/22	6.975.996	1.397.487*

CO² emissions NETZSCH Waldkraiburg

*Purchase of green electricity since 01.01.2022



FIGURES, DATA, FACTS

Gas consumption

Compared to recent years, our consumption of natural gas has increased significantly. This is due to the increased production volume, as well as the fact that our painting areas in Plant I and II are operated with natural gas.

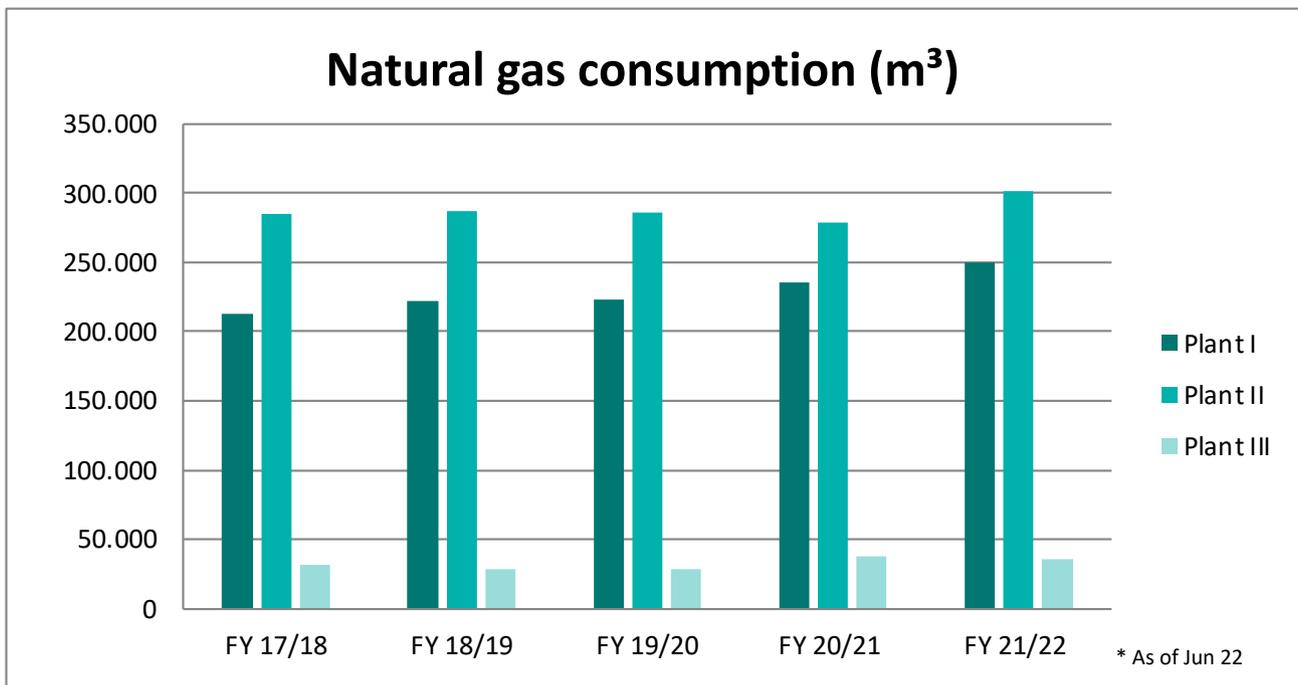
Another reason for the level of our gas consumption is Saturday work. Although not all production employees are present on the weekends, the building is completely heated. Even the equipment requires the same energy when it is not running at optimum capacity, as on Saturdays, as it does during the week when it is running at full capacity.

In order to counteract the further increase in natural gas consumption, we have started the construction of a wood chip heating system. Furthermore, we will optimize the process flow through innovative solutions.

Total gas Consumption and CO² emissions

Gas consumption (m ³)		
Financial year	Gas consumption in m ³ /year	CO ² emissions in kg/year
16/17	540.605	1.303.939
17/18	529.747	1.277.749
18/19	537.737	1.297.021
19/20	538.370	1.298.548
20/21	554.025	1.336.308
21/22	587.124	1.416.120

CO² emissions NETZSCH Waldkraiburg



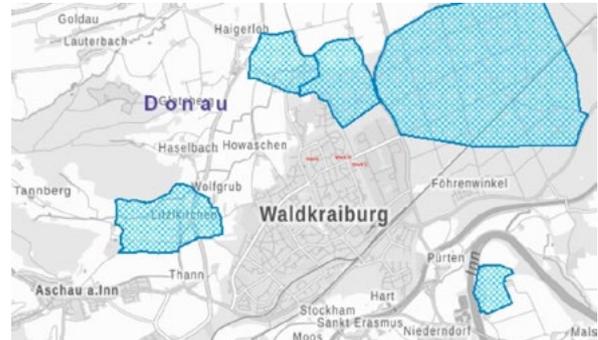
FIGURES, DATA, FACTS

Water consumption and wastewater quality

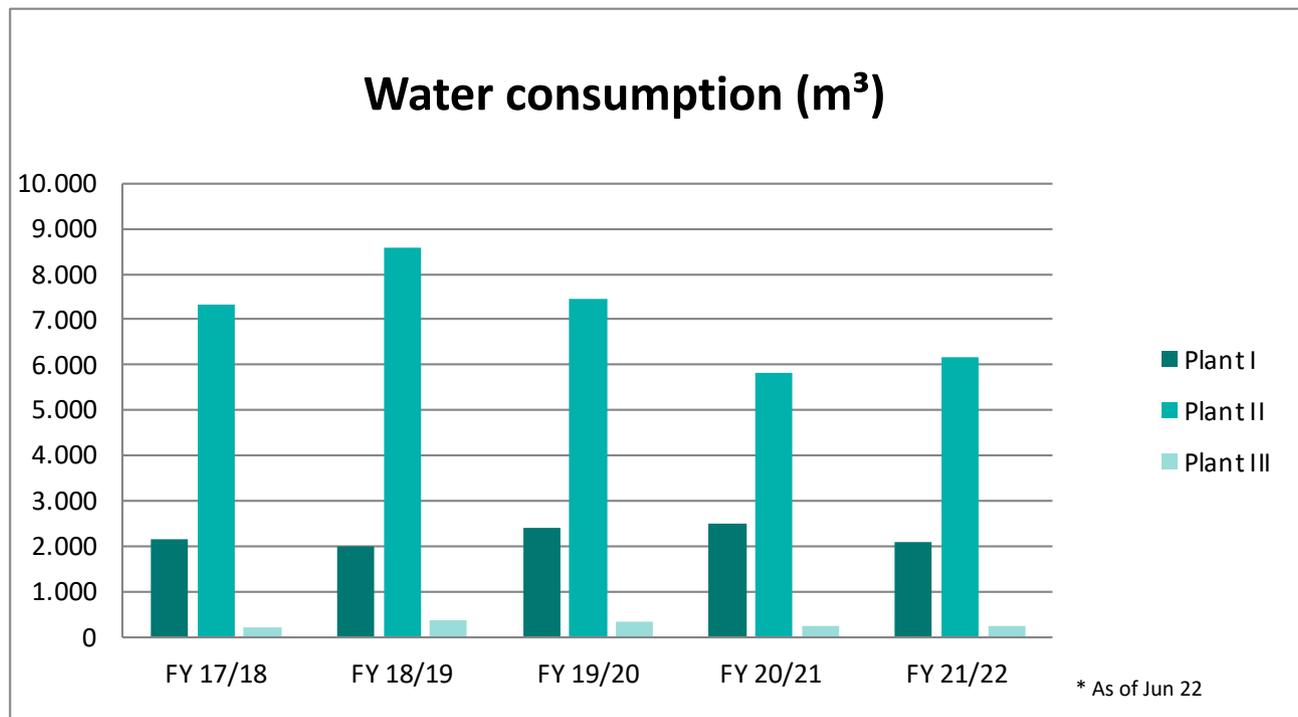
Water is an essential prerequisite for human, animal and plant life, as well as an indispensable resource for the economy. There is no substitute for it, which is why effective protection and the careful use of water are our common duty.

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.

This year, water consumption has increased slightly. The additional consumption resulted from the construction of the new building envelope. In the years before, water consumption decreased in all three plants. Sensitive handling of drinking water has helped to reduce the consumption. This trend is to be continued in the following years.

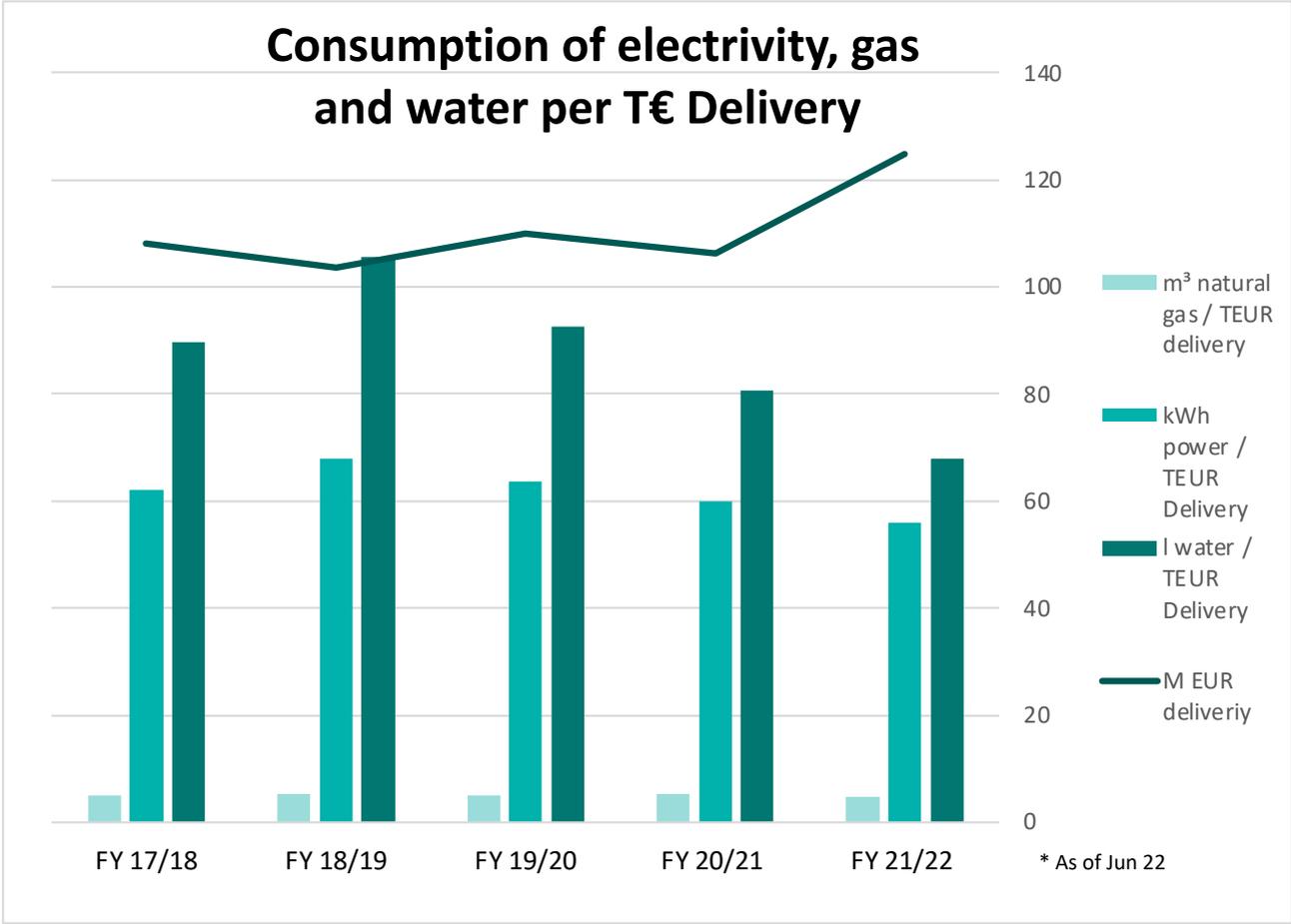


The map shows that our plants are not located in a designated water protection zone.



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 33,750 kWh

The compressed air is generated with a compressor with 7,5 kW drive power. Approx. 4500 operating hours were reached in 2022. Inspections to identify leaks in the compressed air network are conducted once a year.

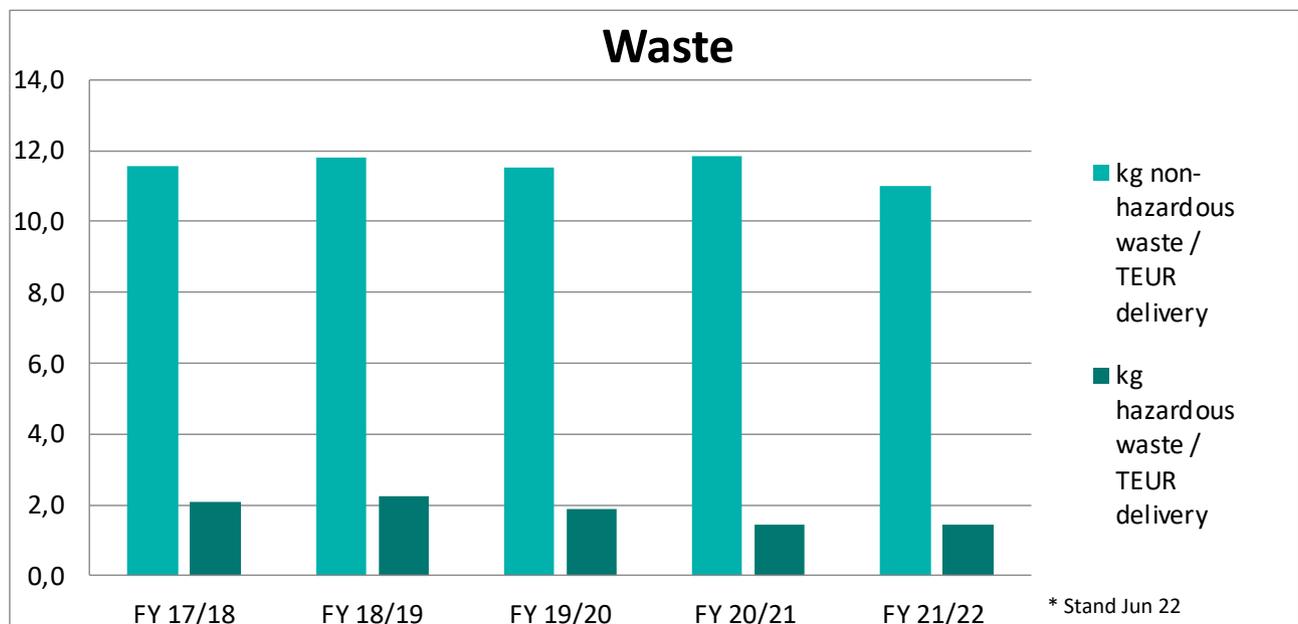
Compressed air plant II electricity 273,922 kWh

In plant II, there is a joint compressed air network of Metal and Elastomer Technology with compressed air centers in both main areas. The three compressors have a drive power of 18,5 kW, 32,8 kW and 37 kW each. In 2022, 3100 operating hours per compressor were achieved. The energy efficiency of the compressed air utilization can be rated as above average. A higher-level control system ensures the targeted start-up and shutdown of the compressors, whose waste heat is fed back into the heating water circuit. As in plant I, inspections to identify leaks take place once a year.

Waste

Waste volumes

A slight decrease can be seen in both hazardous and non-hazardous waste. It is encouraging that we were able to save around 6% in costs through the proper separation of waste. In the future, it will be important as well to use raw materials, products and hazardous substances sparingly in order to protect the environment and continue to save costs.



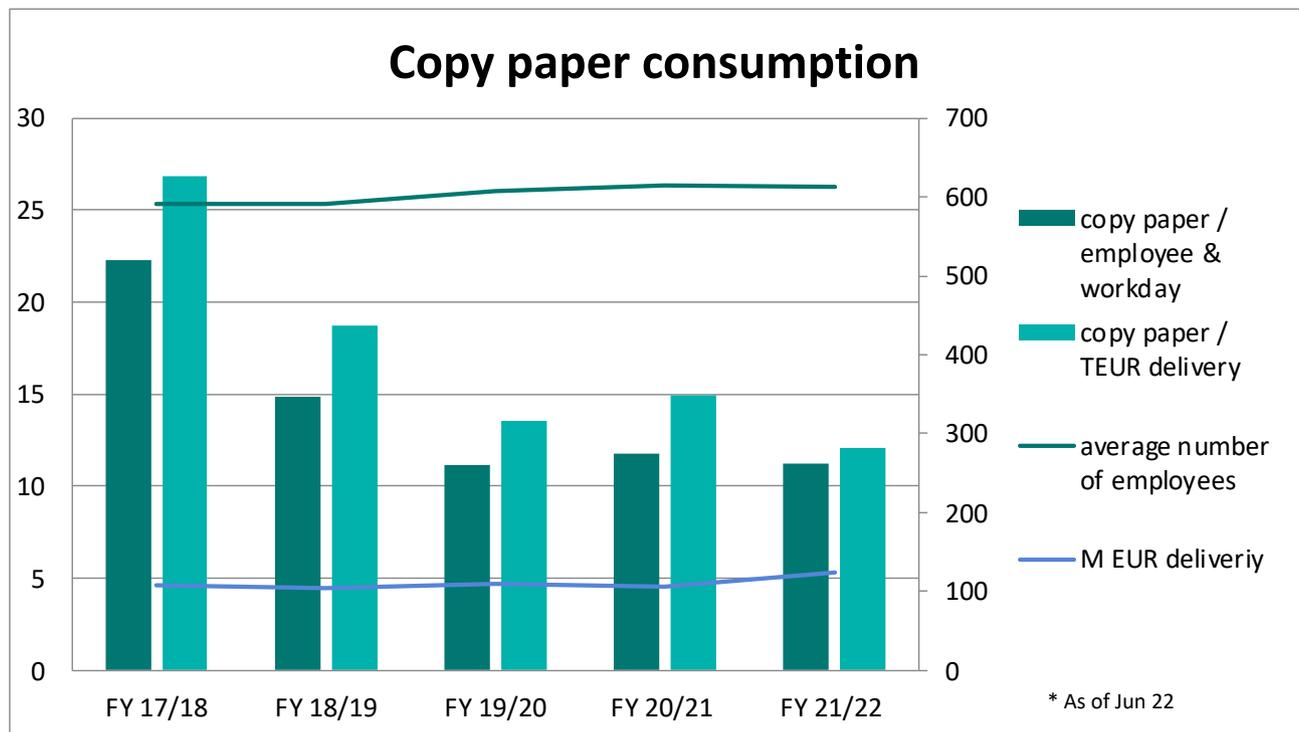
FIGURES, DATA, FACTS

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 2022		
Business year	Q4/22	Q4/22
<p>Activities: What will we do this 12 month?</p>	<p>Saving resources</p> <ul style="list-style-type: none"> Reduction of waste volumes, energy consumption and emission levels by approx. 5% Training and sensitization of our employees with regard to waste separation and sustainability Paperless office – Successfully complete the project “going paperless” Reduction of the working materials in the house by approx. 10% (currently over 400) Abandonment of fossil fuels Complete switch to district heating by 2025 Power generation through photovoltaics 	<p>System and managed optimizations</p> <ul style="list-style-type: none"> Maintenance and care of GEORG Auditing of suppliers with environmental relevance Develop and drive forward sustainability strategy Keep EcoVadis level on silver medal Continue CO² consideration in the company Promotion via IGW and marketing KPI reporting – quarterly, additional sub-process related, pivot table with dashboard Review emergency management and optimize if necessary (leakage emergency training, incident plan, emergency materials, reporting system, incidents) Pay attention to REACH and SVHC guidelines
<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 clean sorting of waste volumes Reduction of work accidents 	<ul style="list-style-type: none"> Increased transparency regarding environmental impacts More visible environmental commitment

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 m³ 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, CO² 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 m² at Plant III and approx. 3000 m² 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 CO² emissions.

2021: Changeover to chip disposal

Until now, loose metal chips with a cooling lubricant content of up to 14% were collected in 20m³ 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, CO² 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

In order to be able to do without natural gas for the most part in the future, a wood chip plant is being built. The energy generated by this will be used primarily for process heat. The move from Plant I to Plant II will also reduce the basic consumption of natural gas by 33%.

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 4,000 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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