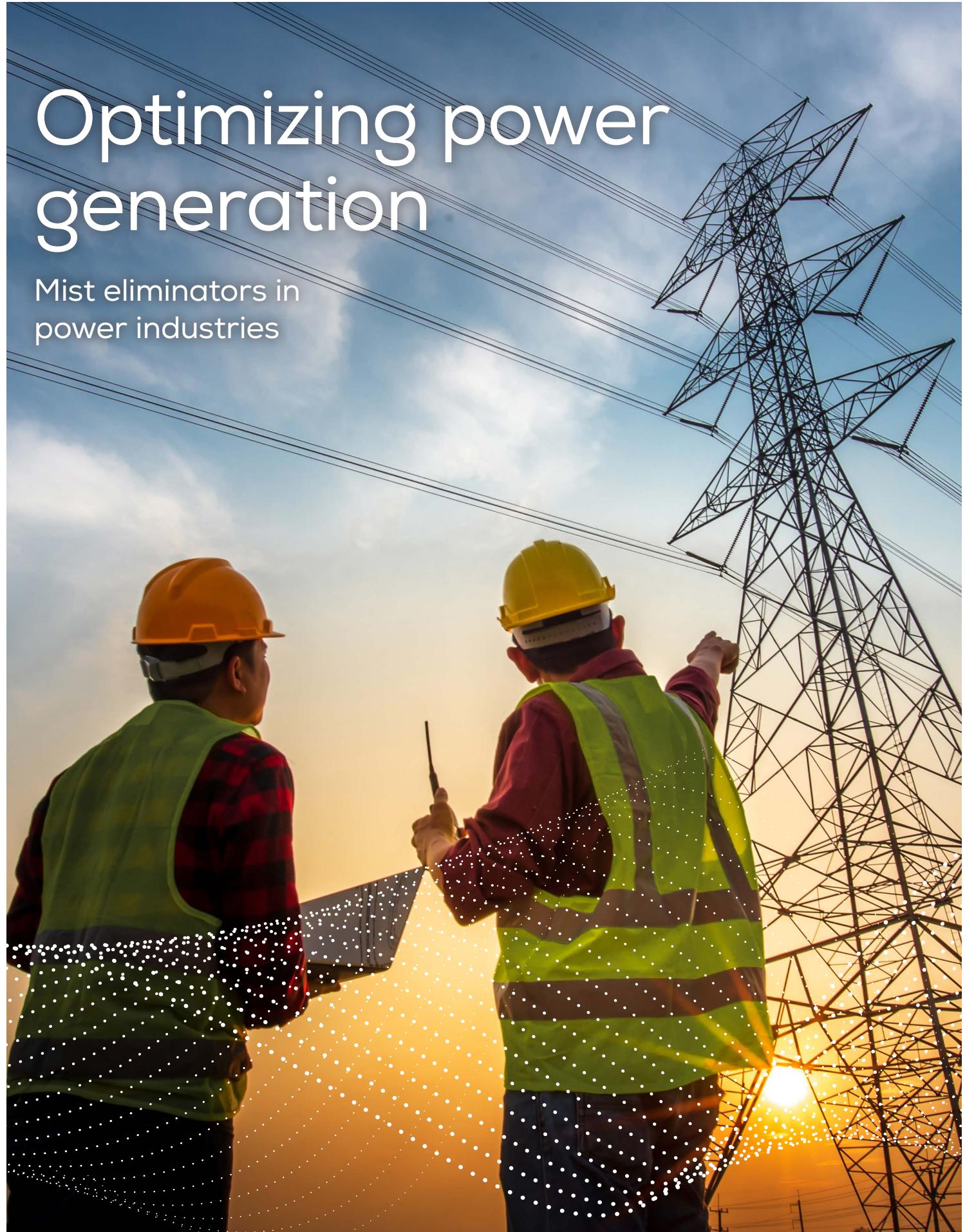


# Optimizing power generation

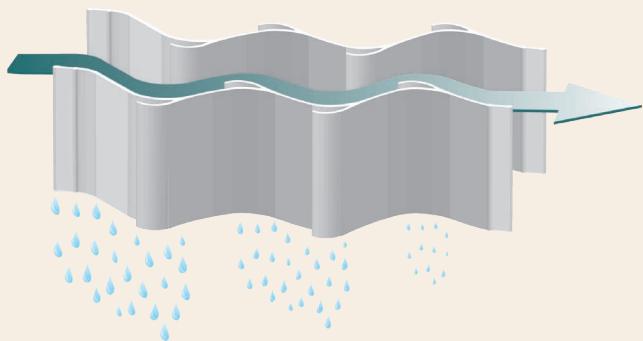
Mist eliminators in  
power industries



# Munters mist elimination solutions for power providers

In the power industry, mist elimination is vital for efficient processes, protecting downstream systems, and maintaining control at each stage. Choosing the right setup, tailored to equipment, location, and application, with precise component matching, demands a deep understanding of power processes and mist elimination physics.

Munters is a leading mist elimination equipment provider for both traditional and renewable energy sources. Coal-fired power plants and waste-to-energy facilities use mist elimination equipment in their exhaust gas cleaning processes to prevent droplets in the exhaust of the scrubbed gasses. While wind and gas turbine facilities can protect equipment from corrosion by separating droplets from intake air with mist eliminators, facilitating smooth and effective operation.



*Mist elimination principle with DH 5000 for horizontal flow.*

## **Mist elimination applications for the power sector:**

- Removal of liquid drops from incoming supply air
- Removal of SO<sub>2</sub> from exhaust flue gases
- Prevent droplets in the exhaust of scrubbed gas streams



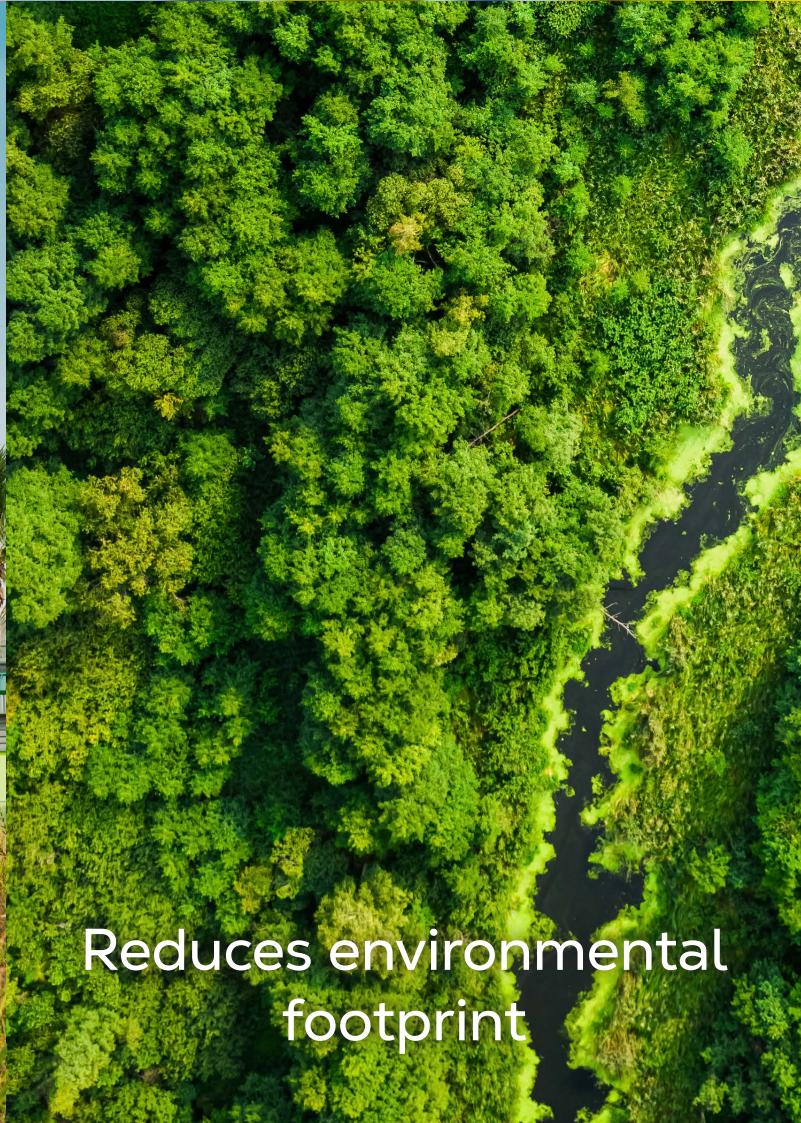
30 years of mist  
elimination expertise



Improves process  
productivity



Lowers emissions



Reduces environmental  
footprint

# Helping coal-fired power plants maximize production and minimize emissions

Munters cutting-edge mist elimination technology addresses the challenges faced by coal-fired power plants. Flue gases from burning coal contain pollutants that contribute to environmental degradation, and Munters mist elimination solutions offer a proven method to significantly reduce these emissions. By refining the flue gas cleaning process, Munters contributes to a cleaner, greener energy future.

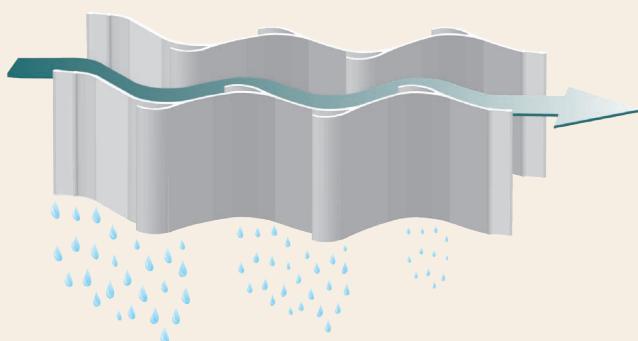
## Mist elimination in flue gas desulfurization

Munters mist elimination technology is seamlessly integrated into the desulfurization process of coal-fired power plants. As coal burns, it releases sulfur compounds that, if left unchecked, contribute to acid rain and environmental harm. Our mist eliminators efficiently capture over 95% of these contaminants, ensuring that the flue gases emitted meet or exceed stringent regulatory standards. This advanced technology is not just a solution; it's a commitment to transforming coal-fired power generation into a cleaner and more sustainable process.

## Flue gas desulfurization excellence – a closer look at Munters impact

At the core of Munters commitment to cleaner coal-fired power lies our expertise in flue gas desulfurization (FGD). This process, seamlessly incorporating Munters mist elimination technology, is pivotal in mitigating the environmental impact of sulfur emissions. In the FGD tower, flue gases undergo a meticulous transformation. A mixture of water and chemicals is strategically sprayed, binding with sulfur compounds.

Munters mist eliminators then come into action, efficiently capturing the resulting contaminants, preventing their release into the atmosphere. This robust integration ensures that the desulfurization process achieves unparalleled efficiency, surpassing regulatory requirements and contributing significantly to a marked reduction in harmful emissions. Munters continues to lead in advancing FGD technology, empowering coal-fired power plants to operate responsibly and sustainably.



*Mist elimination principle with DH 5000 for horizontal flow.*

## Advantages with Munters mist elimination solutions:

- Ensure environmental compliance, preventing droplet escape to avoid sanctions
- Safeguard downstream equipment, reducing clogs and enhancing overall functionality
- Prevent corrosive rain, extending plant life and protecting infrastructure
- Capture solvent liquid, minimizing gas cleaning costs



# Helping coal-fired power plants become more sustainable

Global impact: mist elimination solutions worldwide  
Munters mist elimination solutions have made a global impact, with successful projects spanning Asia, Europe, and various regions worldwide. Coal-fired power plants, equipped with Munters mist eliminators lessen the environmental impact of coal-fired power plants. Through collaboration and innovation, Munters continues to be a driving force in advancing mist elimination technology, ensuring a cleaner, more sustainable future for coal-fired power generation across the globe.

## Munters ongoing innovation for sustainable coal power

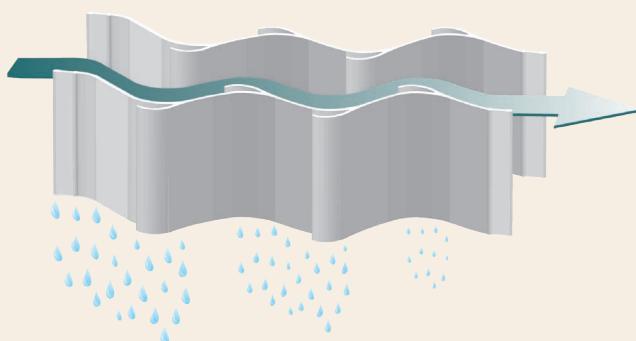
Munters remains at the forefront of innovation, continuously refining mist elimination technology to meet the evolving needs of the coal-fired power industry. Our commitment extends beyond today,

as we actively work towards tomorrow with research and development to enhance the efficiency and environmental impact of our solutions.

## We help deliver clean air to the world

Clean technologies by Munters improve process productivity while reducing emissions and your carbon footprint. Trust Munters to deliver solutions that optimize your operations and help you achieve your environmental objectives.

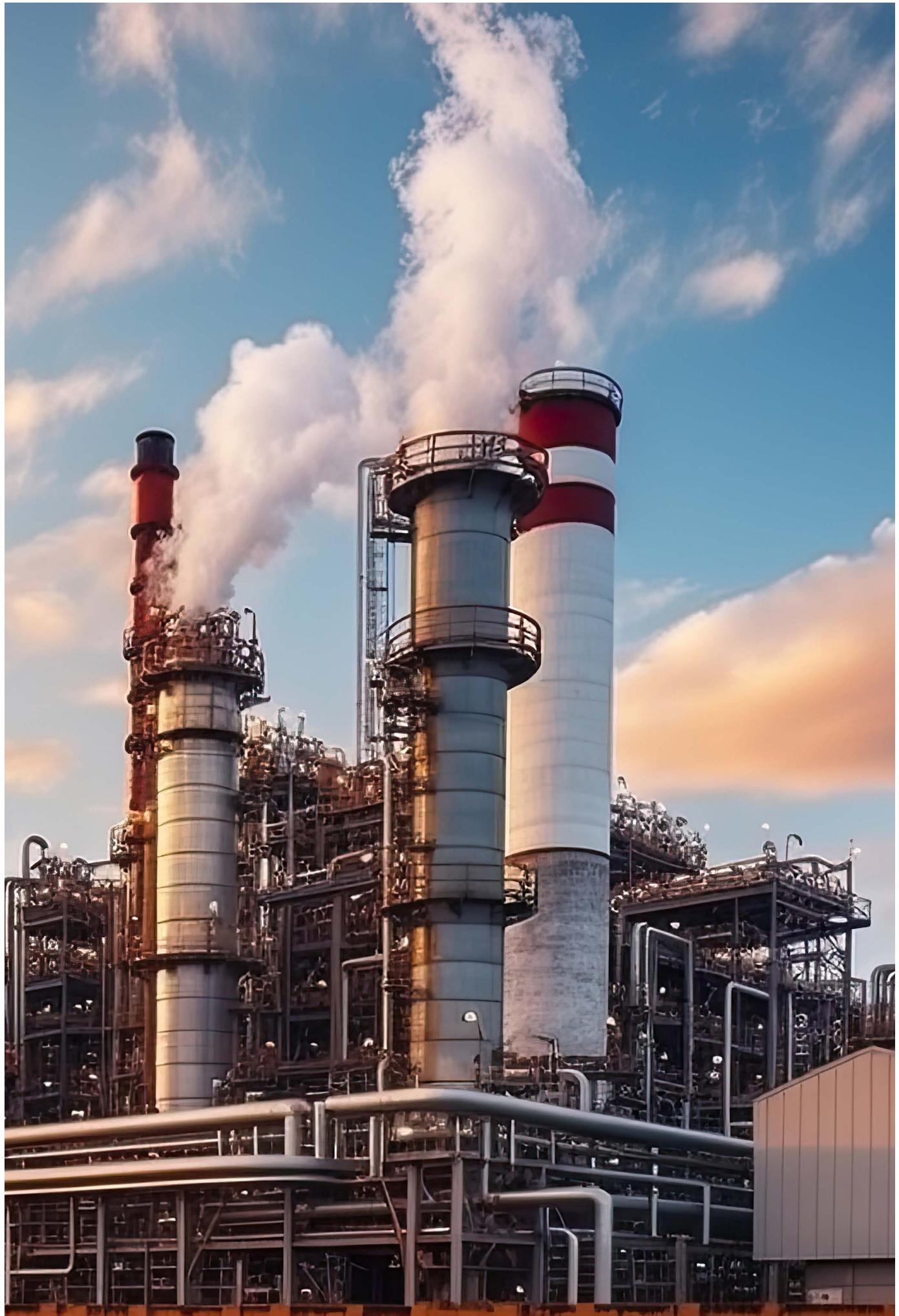
Munters mist eliminators help virtually anywhere liquid droplets and gasses need to be separated. Power plants, marine, steel and further process industries all benefit from Munters industry-leading expertise. Munters mist elimination enhances process productivity, lowers emissions and helps reduce the environmental footprint of our customers.



*Mist elimination principle with DH 5000 for horizontal flow.*

## Advantages with Munters mist elimination solutions:

- Versatile solutions tailored to each process
- Protect the environment
- Help meet legislative requirements
- Protect downstream equipment
- Minimize gas cleaning costs by capturing solvent liquid





# Helping wind and gas turbines maximize performance and protect equipment

## Climate control for wind turbines

Preventing electronic damage and short-circuiting due to moisture and particle ingress is essential to wind turbine operation. Key areas of risk include water ingress through air intakes and corrosion caused by condensation. As a trusted supplier to many of the world's leading wind turbine manufacturers, Munters can help you overcome these potentially damaging conditions.

Unique challenges in wind turbine environments  
Wind turbines, both land-based and offshore, play a vital role in sustainable power generation. However, the harsh environmental conditions they face demand specialized protection for the nacelle machinery and tower. Munters understands these challenges and provides solutions to combat water ingress and corrosion threats.

## Tailored mist elimination solutions

Munters offers a comprehensive range of mist eliminators, customized to meet the specific demands of wind turbine environments. Our mist elimination solutions efficiently separate rain, hail, snow, and

solid airborne particles from the incoming cooling air, ensuring optimal performance and longevity of turbine components.

## Ice-free operations in cold climates

In frigid climates where temperatures approach or drop below 0°C, the risk of icing poses a significant challenge. Munters addresses this issue by providing mist eliminators with integrated heating devices (DFH), ensuring year-round ice-free air intakes. This not only eliminates the high maintenance costs associated with ice build-up but also mitigates the latent risk of accidents.

## Advantages with Munters mist elimination solutions:

- Customized solutions for water ingress and corrosion, ensuring wind turbine performance
- Efficient particle separation: Filter rain, hail, snow, etc
- Ensure ice-free air intakes, reducing maintenance costs
- Help extend longevity and operational reliability of wind turbines

## Climate control for gas turbines

Modern gas turbine facilities have made great strides towards improving the quality of air introduced into the turbine. But even modern plant designs may suffer from fouling due to the ingress of dust, particles, liquid and salt air. Using the proper mist elimination techniques can reduce these risks. Moreover, reducing the temperature of the incoming process air increases gas turbine efficiency.

## Optimizing air quality for enhanced performance

Critical to the output and fuel efficiency of gas turbine generators is the quality of the air entering the combustion chamber. Munters mist eliminators, equipped with an optional heating device (DFH) for ice protection, are purpose-built for this demanding environment. They efficiently remove damaging contamination from the air, ensuring consistent optimal airflows throughout the year. This precision contributes to improved power output and extends the operational life of the gas turbine.

## Streamlined inlet for enhanced efficiency

Munters mist eliminators reduce pressure drop through the turbine inlet, eliminating the need for

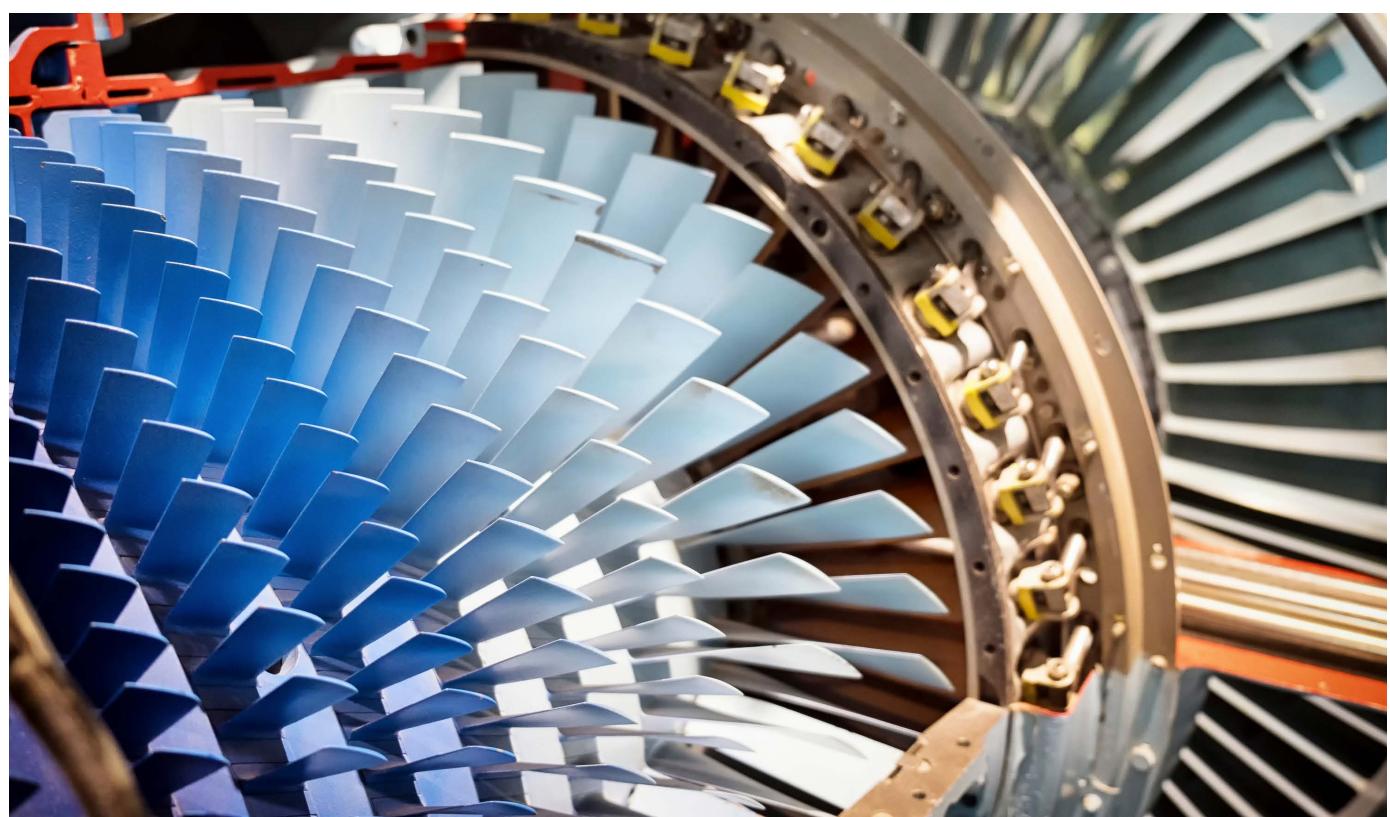
weather hoods. This streamlined approach not only enhances efficiency but also minimizes maintenance requirements and downtime.

## System benefits for reliability and efficiency

Reduced maintenance and downtime, along with an extended operational life for the turbine, contribute to streamlined operations and a longer-term return on investment. Precise control of air quality not only ensures optimal performance but also leads to increased power generation by minimizing inlet pressure drop, making gas turbines more efficient.

## Advantages with Munters mist elimination solutions:

- Consistent optimal airflows, enhancing gas turbine output
- Streamlined turbine inlets reduce pressure drop, improving overall efficiency and minimizing downtime
- Extended operational life and reduced maintenance costs
- Precise air quality delivers higher power generation efficiency





# Munters advances pollution abatement in Singapore

## Background

Munters, a leader in SOx abatement technology for over 40 years, is at the forefront of waste-to-energy solutions. The upcoming waste-to-energy plant in Singapore, operated by the National Environment Agency, is an example of Munters commitment to addressing pollution challenges. Partnering with LAB France and Andritz China, Munters mist elimination equipment plays a pivotal role in this ambitious project set to begin operations in 2024.

## Challenge and solution

Waste-to-energy installations pose unique challenges, with two key pollution abatement streams—HCL scrubbing and SO<sub>2</sub> scrubbing. Munters mist eliminators are integral to both streams, preventing droplets in the exhaust of the scrubbed gas. Tailor-made equipment, using Munters mist elimination technology, ensures high performance with minimal

energy consumption, meeting stringent local environmental pollution abatement limits. Scheduled for delivery in 2023, this cutting-edge solution exemplifies Munters dedication to sustainable waste-to-energy practices.

## Munters treats SOx emissions in the waste-to-energy sector:

- Munters has been supporting the FGD segment for SOx abatement for 40+ years
- Munters aids a major waste-to-energy plant in Singapore – planned 2024 operation start
- Partnerships with LAB France, Andritz China in pollution abatement
- Munters tackles HCL, SO<sub>2</sub> scrubbing with precision mist elimination
- Tailor-made Munters equipment ensures high efficiency, low energy consumption

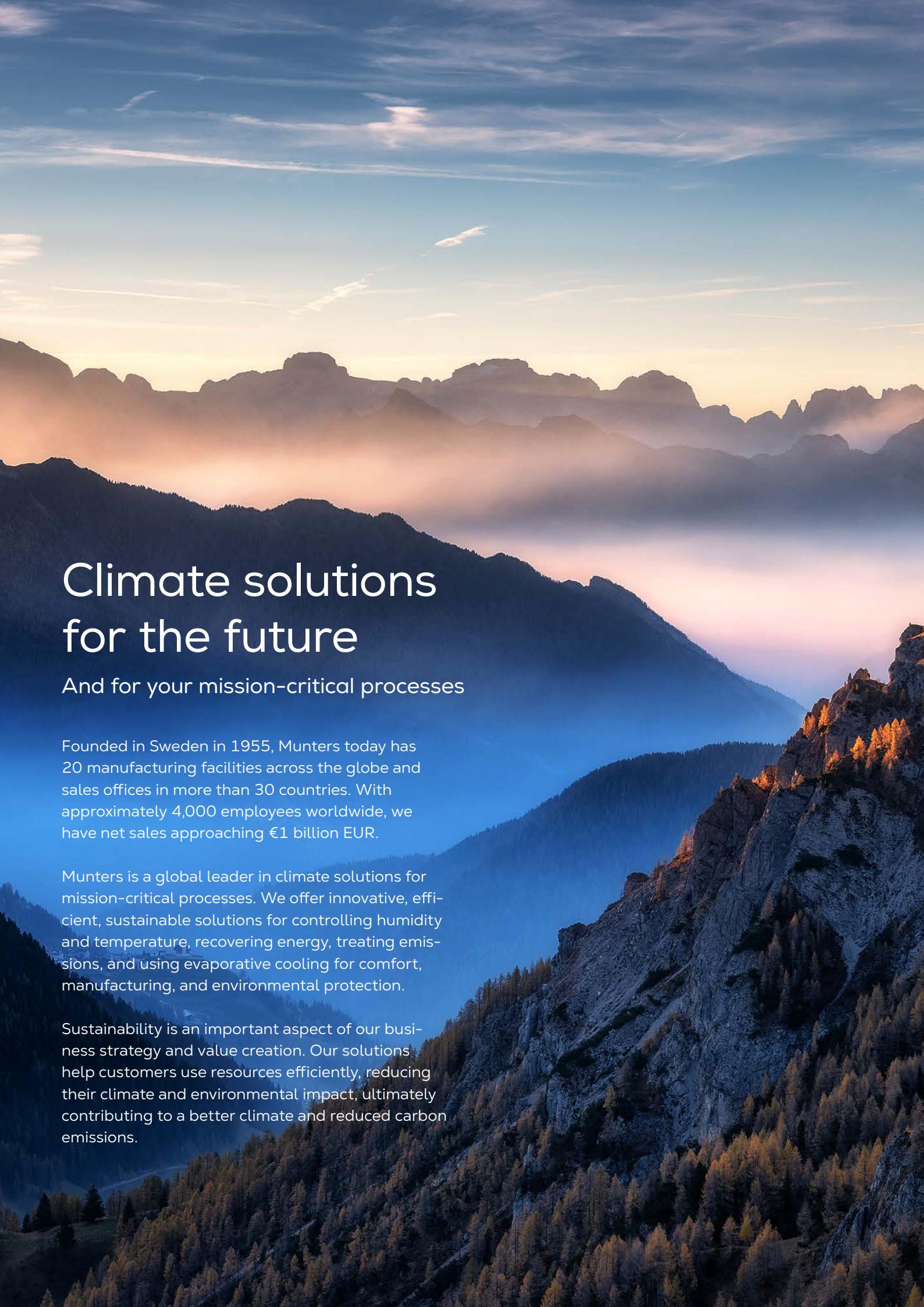
# Mist elimination is our business

Wherever liquids and gases need to be separated, mist eliminators can do the job. But while the principle is simple, applying the technology efficiently and to maximum effect is demanding. Munters has the knowledge and experience to handle it.

For decades Munters has been working closely with customers in traditional coal-fired power plants, and more recently we've supported new, renewable power sources such as wind and gas turbines, as

well as waste-to-energy facilities. Our mist eliminator profiles are continuously assessed and developed as processes and conditions evolve. Design parameters for installations are evaluated using an extensive database and a powerful design program. The results are then laboratory-tested. Our close attention to detail and the expertise of our R&D departments have made us the leaders in this technology.





# Climate solutions for the future

And for your mission-critical processes

Founded in Sweden in 1955, Munters today has 20 manufacturing facilities across the globe and sales offices in more than 30 countries. With approximately 4,000 employees worldwide, we have net sales approaching €1 billion EUR.

Munters is a global leader in climate solutions for mission-critical processes. We offer innovative, efficient, sustainable solutions for controlling humidity and temperature, recovering energy, treating emissions, and using evaporative cooling for comfort, manufacturing, and environmental protection.

Sustainability is an important aspect of our business strategy and value creation. Our solutions help customers use resources efficiently, reducing their climate and environmental impact, ultimately contributing to a better climate and reduced carbon emissions.



# Munters Service portfolio

At Munters, we are committed to offering a complete portfolio of service offerings to support you throughout the entire lifecycle of your Munters equipment.

## Commissioning support

Our trained service technicians make sure your equipment is operating as designed so your investment gets the best possible start. We offer everything from basic unit start-up to extensive turnkey installations.

## Maintenance

Keep your equipment running like new with on-site visits by factory-trained technicians and regular rotor performance checks.

## Retrofit and upgrade

Boost energy efficiency and capacity with our retrofit solutions for equipment already in operation.

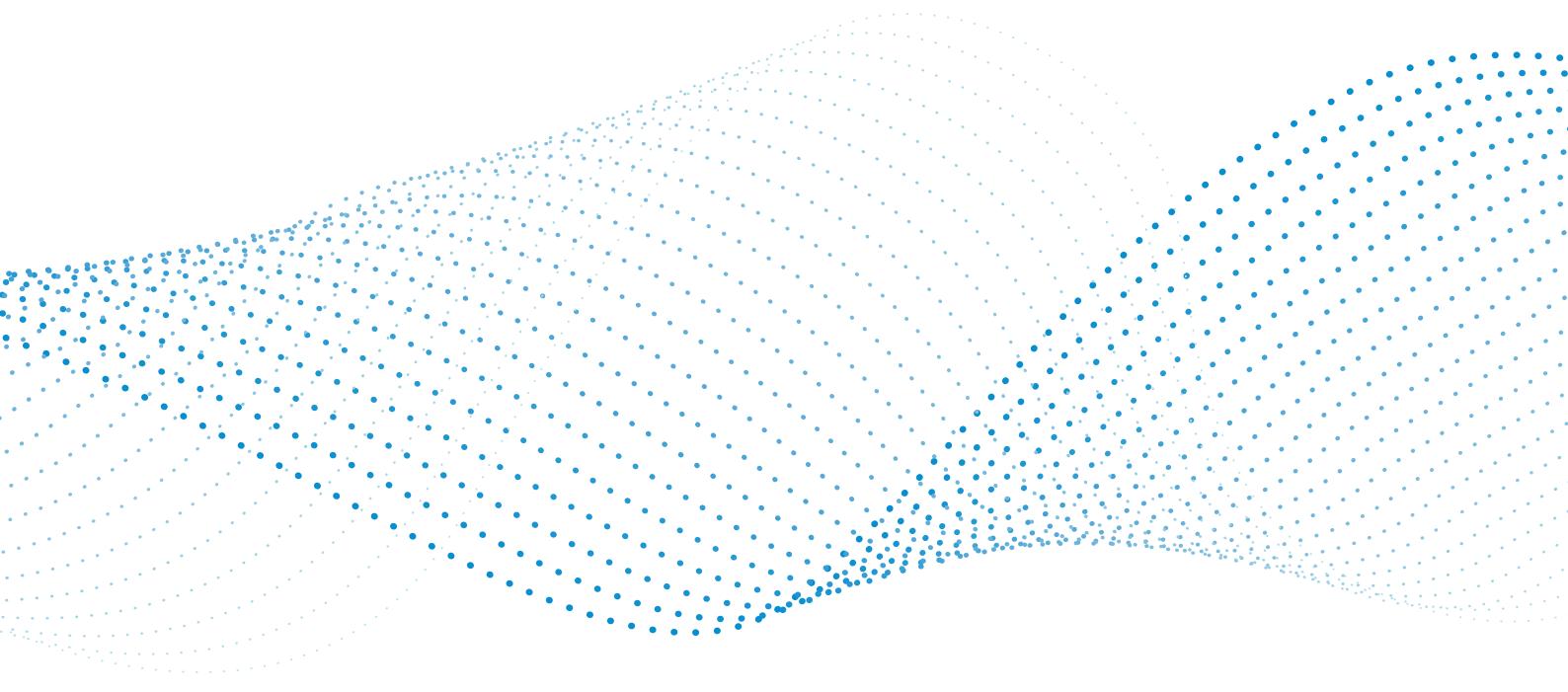
Upgrade controls, replace your rotor or upgrade your fan to maximize performance, save money and energy. Munters also custom fabricates zeolite blocks for replacement of all zeolite and carbon rotor systems.

## Munters Service Agreements

Ensure that your Munters equipment always performs according to specifications. Munters Service Agreements, tailored to your needs, offer industry-leading lifecycle care for your equipment – and peace of mind for yourself.

## Munters Genuine Parts

We use only Munters Genuine Parts, which are designed, tested, and verified to ensure that each part meets or exceeds specifications. Convenient service kits are made to make maintenance simple.



Munters is a global leader in energy-efficient air treatment and climate solutions. Using innovative technologies, Munters creates the perfect climate for customers in a wide range of industries.

Munters has been defining the future of air treatment since 1955. Today, around 4,000 employees carry out manufacturing and sales in more than 30 countries.

For more information, please visit [www.munters.com](http://www.munters.com)