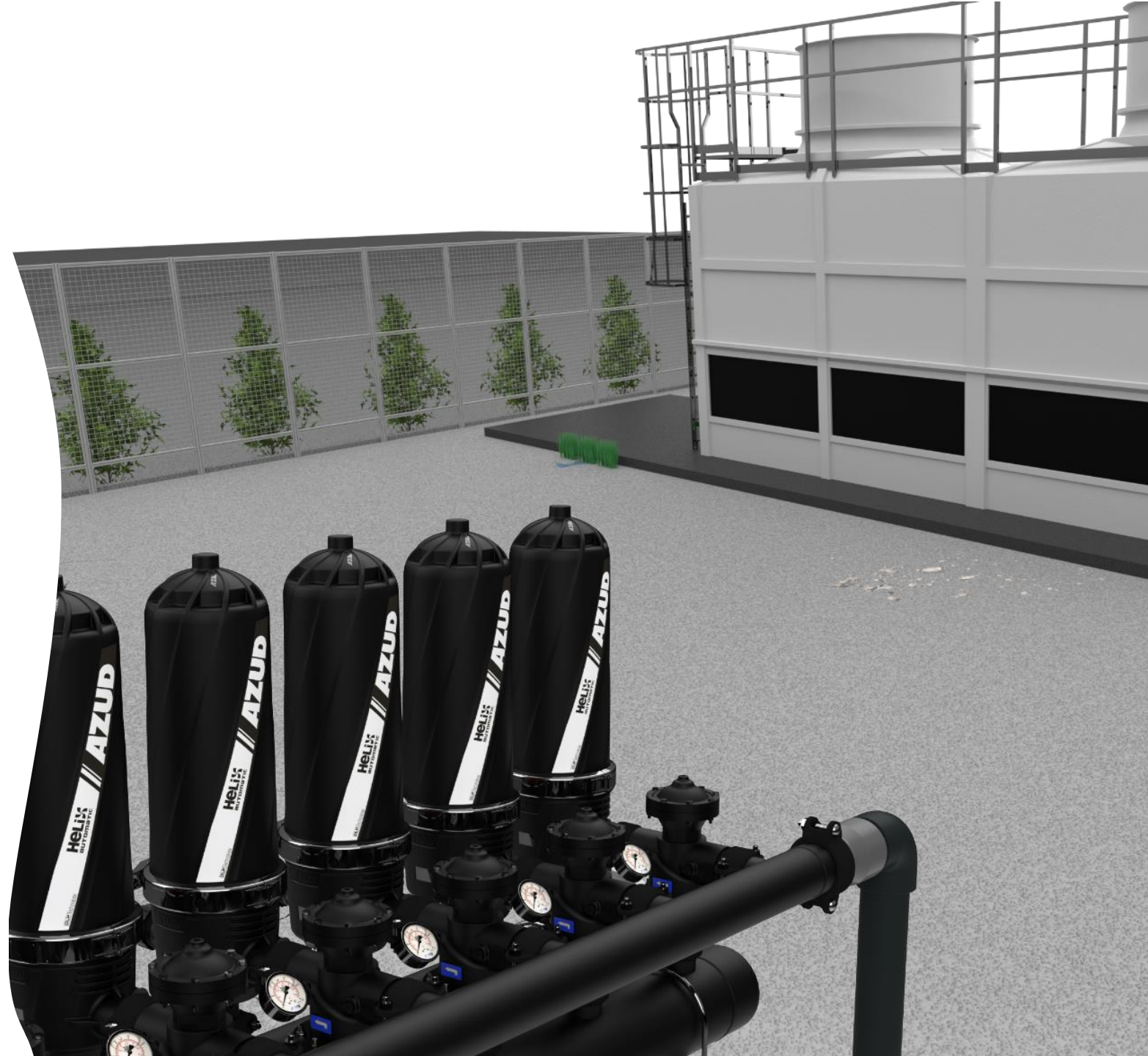




AZUD Helix
AUTOMATIC

Cooling system
PROTECTION



The **WATER** filter

Reliable

Efficient removal of inorganic and organic suspended particles bigger than **5-400 µm**, with a **non-stop clean water supply** based on the sequential backwash of each filter element.

Sustainable

Minimum water and energy consumption thanks to the **AZUD DLP** technology that guarantees a very high self-cleaning efficiency of the filter media with low operation pressure.

Autonomous

AZUD controller that manages the automated self-cleaning sequence to guarantee a safe and autonomous operation.

Innovative

Double filtration effect ensured by the centrifugal separator **AZUD HELIX** and the **AZUD 3D DISCS** with both surface and in-depth particles filtration.

Robust

Plug&play compact and modular solution made of high-quality technical thermoplastics, provides robustness, durability and high corrosion resistance.

Maintenance free

No moving parts to prevent maintenance and spare parts. No need of filtration media replacement.





Water saving LEADER

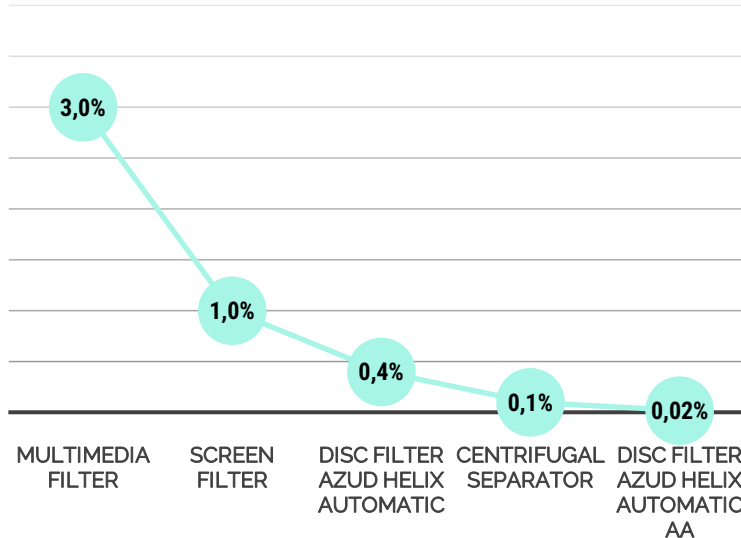
Heavy duty applications

Exclusive **AIR ASSISTED BACKWASH** for applications with high loads of organic and sticky particles, such as open intake sources of sea or fresh water, industrial process water reuse or reclaimed wastewater.

Enhanced backwash

An external pneumatic source drives the filtered water stored in the auxiliary tank while injecting air to generate a very high-speed water-air flushing that ensures a **more effective self-cleaning** of the filter media with less water consumption.

% Backwash flow/ Filtered flow



Huge water saving

AZUD HELIX AUTOMATIC AA equipment requires just 10 l of filtered water during a flushing time of 6-8 seconds to clean efficiently each filter element, that means a **water saving of 99%** versus multimedia filters.

CONFIGURATIONS

Cooling system protection

Option 1

BASIN CLEANING

- ▶ The filtered recirculation is equivalent to the total system volume every 4-6 hours.
- ▶ Filtration degree of 20 - 50 μm for the cleaning of the cooling tower basin, thanks to a nozzle system to keep sedimented particles in suspension.
- ▶ Recommended for installations where the cooling circuit is inaccessible or hydraulic interventions are not desired.

Option 2

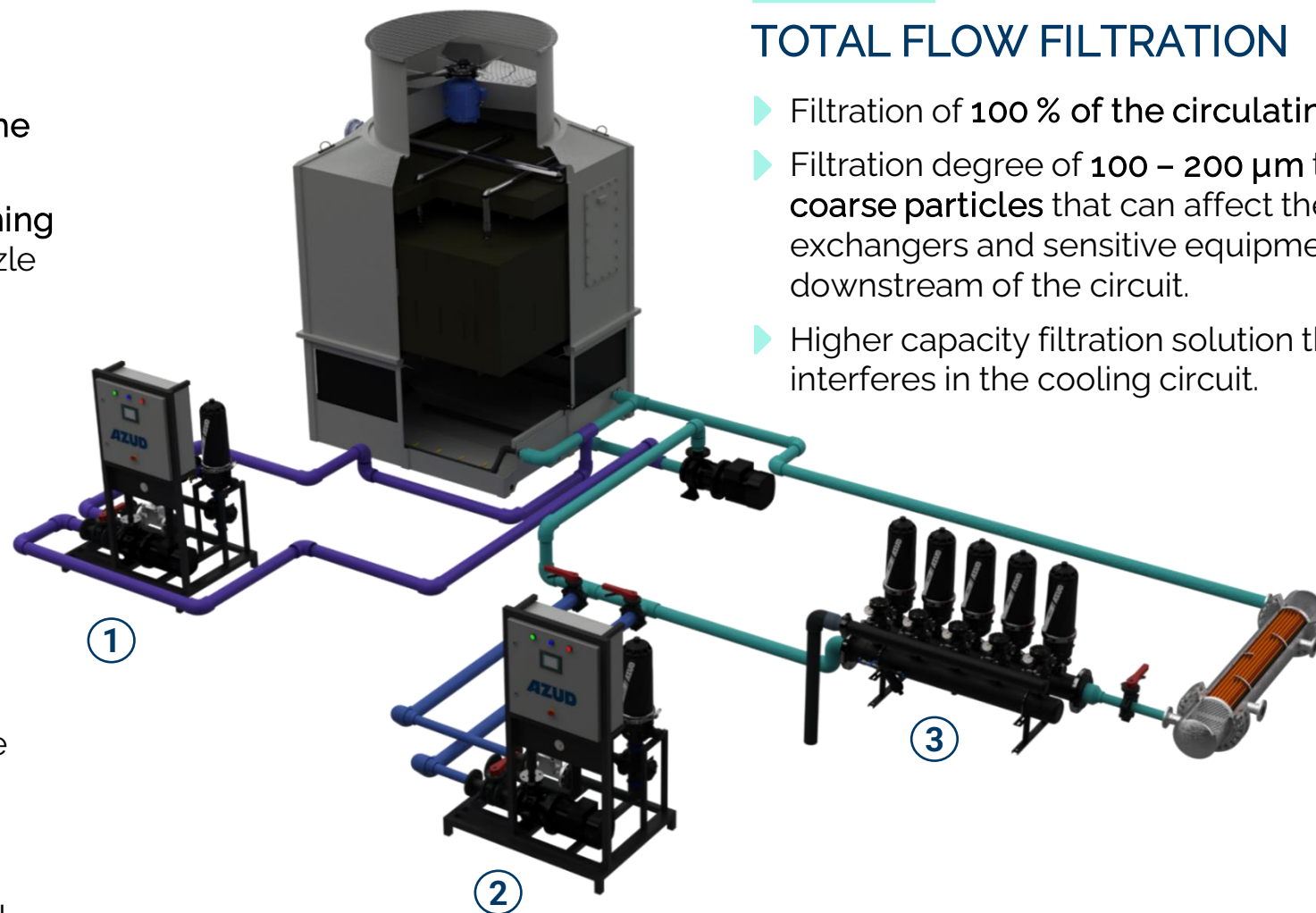
SIDE STREAM FILTRATION

- ▶ Filtration of 5-20 % of the circulating flow.
 - ▶ Filtration degree of 50 - 100 μm to eliminate incoming particles from the cooling system.
- Recommended for installations where intervening the cooling tower is not desired.

Option 3

TOTAL FLOW FILTRATION

- ▶ Filtration of 100 % of the circulating flow.
- ▶ Filtration degree of 100 - 200 μm to eliminate coarse particles that can affect the heat exchangers and sensitive equipment downstream of the circuit.
- ▶ Higher capacity filtration solution that interferes in the cooling circuit.

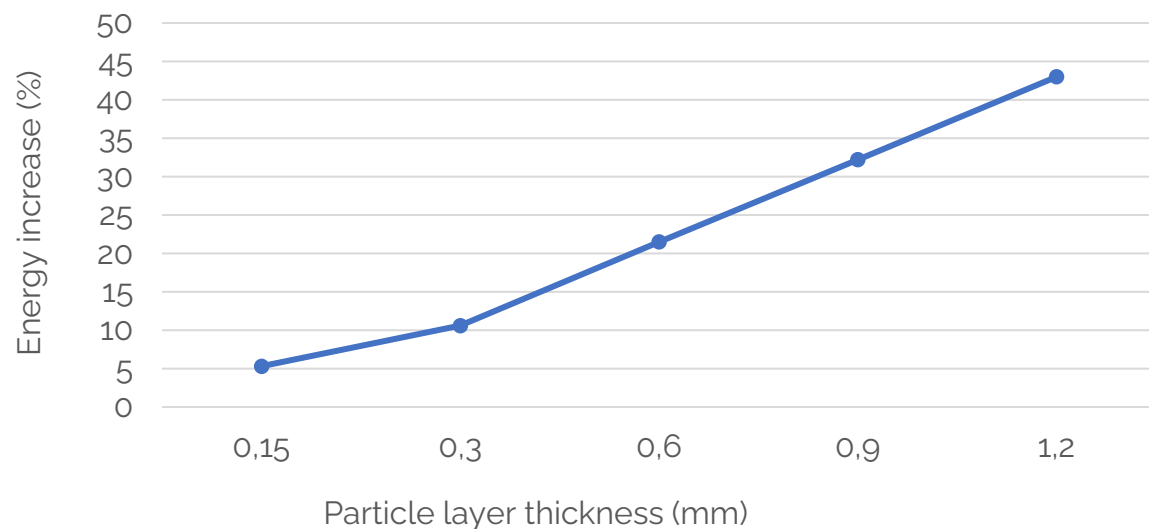


BENEFITS

Cooling system protection

↓ Energy consumption

Without solid deposits, precipitates and biofilm on pipes and heat transfer surfaces to improve the heat transfer coefficient, **optimising the performance and energy efficiency of the cooling system.**



The accumulation of particles in the system increases the thermal gradient between the cold and hot sources, increasing the energy consumption of the pumping and ventilation equipments.

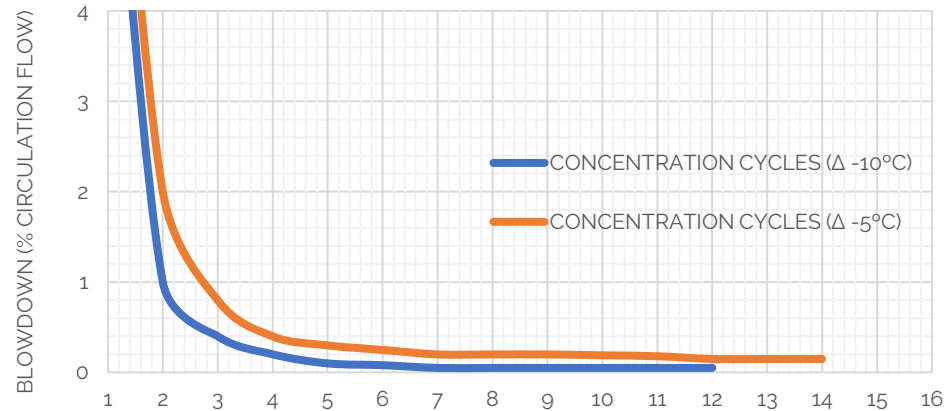


BENEFITS

Cooling system protection

↑ Concentration cycles

Higher water quality increases the concentration cycles, reducing the number of purges needed to maintain the salts concentration in the system and avoid precipitates.



- ▶ Lower amount of make-up water.
- ▶ Less environmental impact by reducing the blowdown volume.
- ▶ No additional water consumption for the backwashing of filtration equipment (backwash water volume < blowdown water volume).
- ▶ Less chemical consumption thanks to an increased recirculation of water in the circuit.



BENEFITS

Cooling system protection

↑ Working safety

Higher quality cooling water notably reduces the risk of pathogen development, mainly legionella, since particles in a cooling system may cause:

- ▶ **INCRUSTATION;** reducing the cooling efficiency and increasing the temperature of the water circulation flow, which serves as breeding ground for biological growth.
- ▶ **SEDIMENTS;** source of food and nesting for all kind of germs.
- ▶ **BLOCKAGES;** cause water stagnation, which favours the growth of the biofilm.



BENEFITS

Cooling system protection

↓ Operational costs

Less risk of clogging the diffusing nozzles in cooling towers, or plates/pipes in heat exchangers, preventing **unscheduled system downtimes**.

↑ Productivity

Higher efficiency of heat exchanging equipment with **less downtimes** for system cleaning and maintenance.

↑ Lifespan of the installation

Higher water quality reduces the working pressure of the system, **minimising the risk of breakdown and deterioration of equipment and components**.





MEXICO

Energy industry



AZUD Helix
AUTOMATIC

- ▶ Side stream filtration in the cooling tower of thermal power plant.

AZUD Discs 200 μ m – DLP

Q = 200 m³/h

FINLAND

Steel industry



AZUD HELIX
AUTOMATIC

► Protection of heat exchanger in Zinc production plant.

AZUD Discs 100 μ m – DLP Sea Water

Q = 500 m³/h

BELARUS

Petrochemical industry



AZUD HELIX
AUTOMATIC

▶ River water filtration for refinery cooling towers.

AZUD Discs 50 μm – DLP AA

Q = 160 m^3/h

ITALY

Chemical industry



AZUD HELIX
AUTOMATIC

▶ Side stream filtration for a chemical plant cooling tower.

AZUD Discs 100 μm – DLP

Q = 150 m^3/h



ARAB EMIRATES

Municipal



AZUD HELIX
AUTOMATIC

- ▶ Filtration of process water used in cooling tower for residential buildings.

AZUD Discs 200 μm – DLP AA
Q = 250 m^3/h

AZUD
The Culture of Water