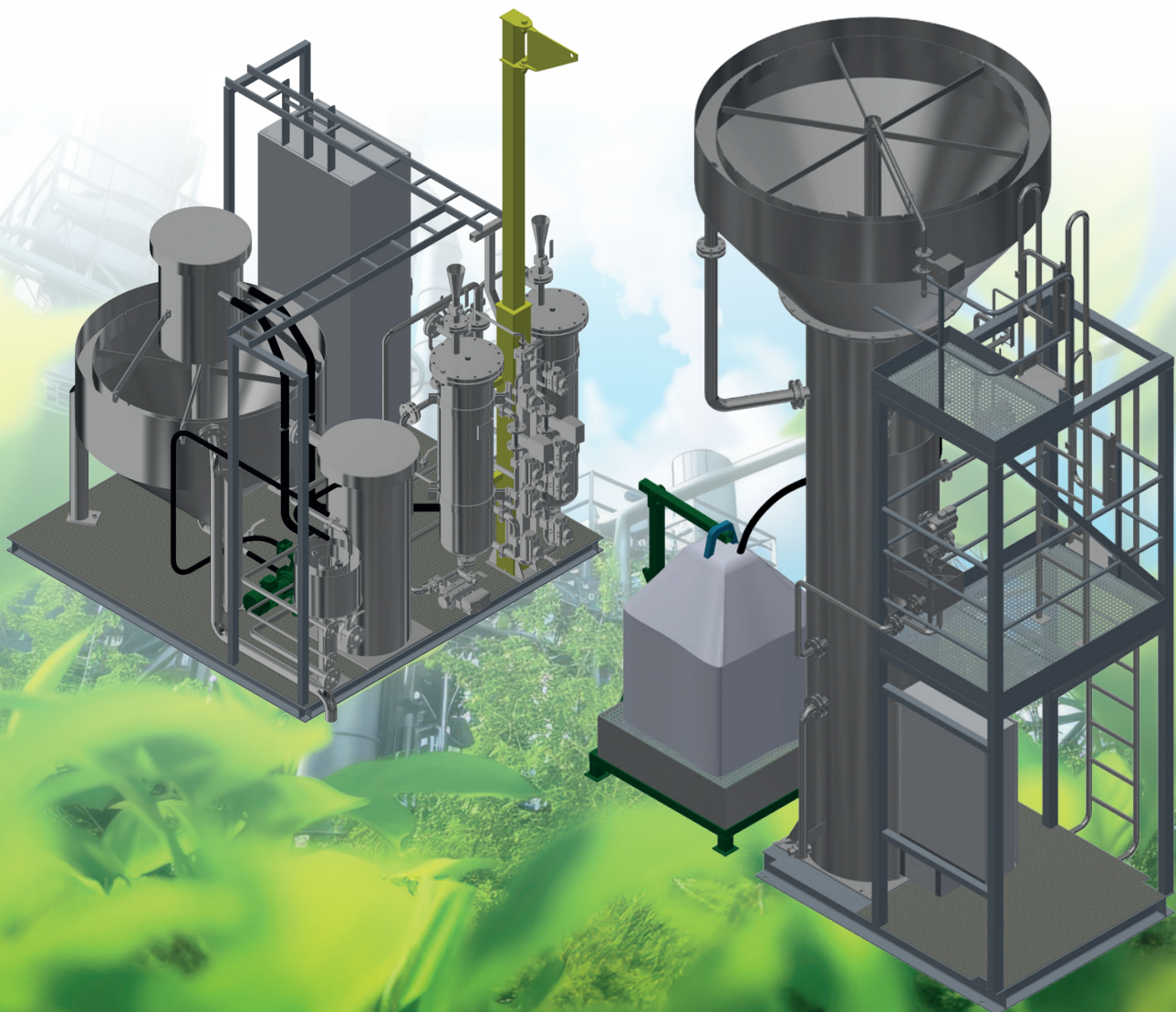




# CALIGO CONDENSATE TREATMENT

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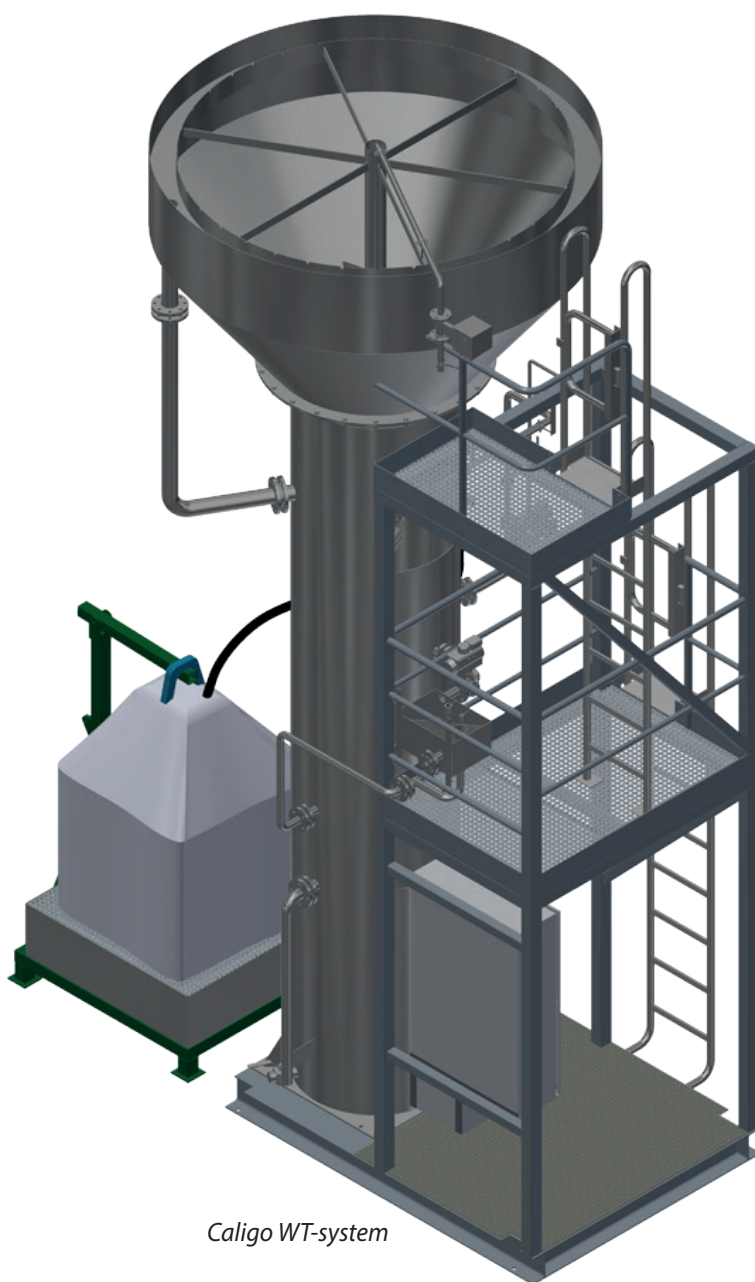
# Caligo condensate treatment

***Caligo Industria has two options for an efficient condensate treatment, reliable also in demanding operating conditions. The Caligo condensate treatment systems WT and WTS handle the condensate treatment, filtering and sludge separation completely and independently.***

The Caligo condensate treatment systems have been developed with particular attention to the specific requirements of bio-energy plants. Both systems can be controlled automatically by an independent logic that controls dynamically the condensate treatment process, according to the parameters of the inlet load.

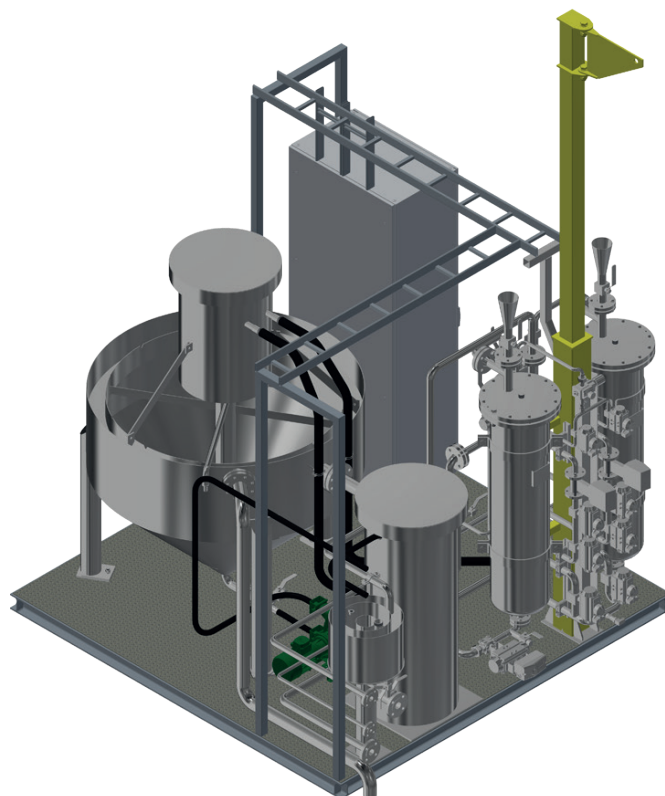
The Caligo systems WT and WTS operate optimally when connected and integrated to the Caligo flue gasscrubber, but they can also be delivered as independent condensate treatment units, without the scrubber.

The Caligo condensate treatment units are delivered as fully functioning plug-and-play products that have been thoroughly tested in the production phase. Both systems fulfil the requirements of the MCP-directive (medium combustion plant directive). Depending on the local requirements, the condensate purified by the Caligo WT- and WTS-systems may be led directly to the rainwater drainage.



*Caligo WT-system*

Caligo WTS-system



## Specifications on Caligo WT & WTS condensate treatment units

	Caligo WT	Caligo WTS
Method	Clarifier & sand filtering technology	Crossflow filtration, typically 1–50 micron filtering
Self-cleaning feature	Automated counter current purification & compressed air burst	Backpulse & ultrasonic burst
Capacity	Dimensioned acc. to prevailing conditions	Max 10 m <sup>3</sup> /h for one piece, however possibility to connect several pieces
Measures	Dimensioned acc. to prevailing conditions	Standard measures 3x3x3m
Automation	Siemens ET200SP CPU <i>If the condensate treatment system is delivered together with the scrubber, the automation system is integrated to the scrubber logic.</i>	
Material	AISI 316	

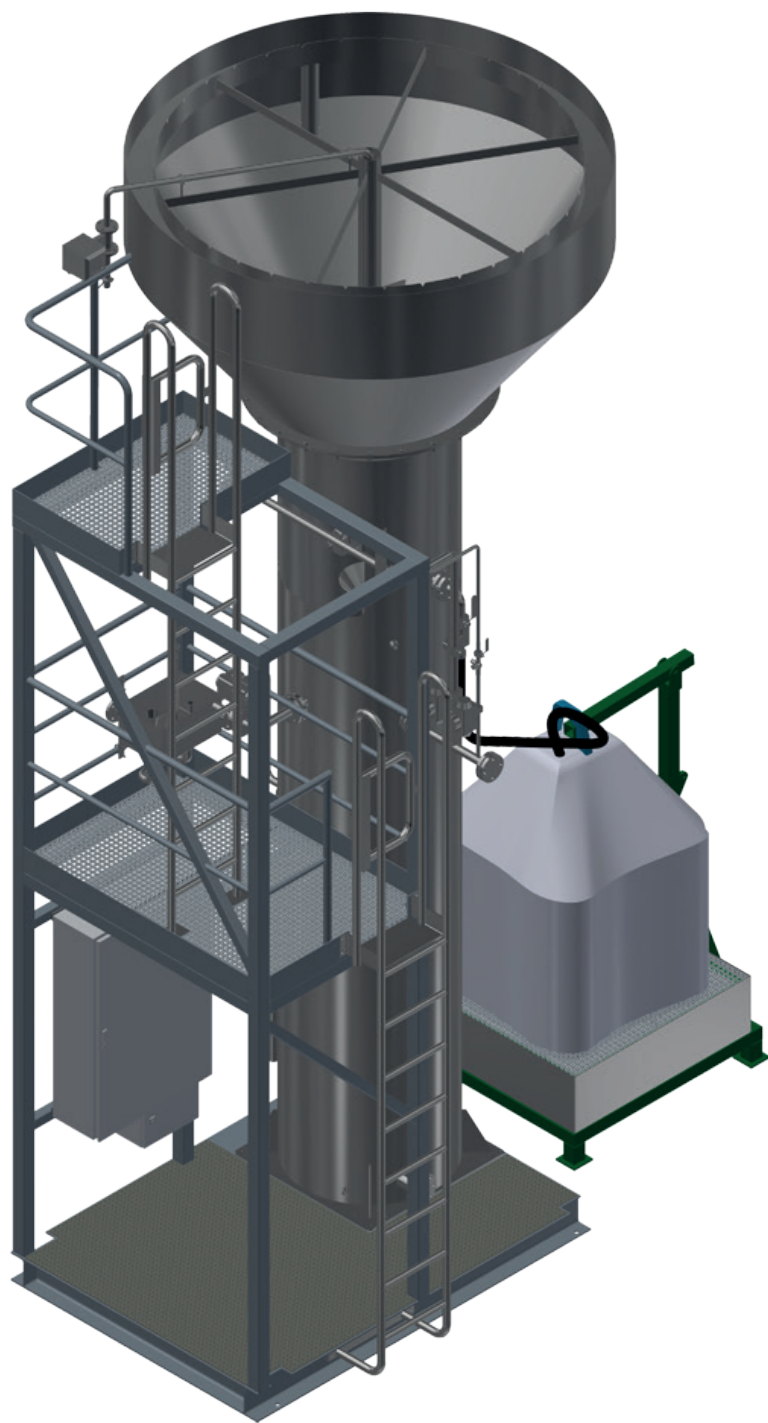
## The performance and the chemical composition of the treated condensate of Caligo WT & WTS condensate treatment units

Characteristics of the treated condensate	
Solid content	<10 mg/l
pH (25°C)	6–9 with neutralization unit (optional)
Temperature of the treated condensate	max. 40°C with heat exchanger (optional)
Solid content of the separated sludge	At least 50% when using the Caligo sludge treatment and storing unit (optional) for a week
Heavy metals	The heavy metal content is dependent on the used fuel. Heavy metal precipitation and post-neutralization unit (optional).



# Advantages of the Caligo WT system

- › Scalable for treating large quantities of condensate
- › Suitable for very dirty condensate
- › Long lifetime
- › No need for raw water during cleaning
- › The maintenance of the system is kept minimum
- › User friendly, easy and safe to use
- › Low electricity consumption due to gravitational filter
- › Automated control system
- › Full metal structure



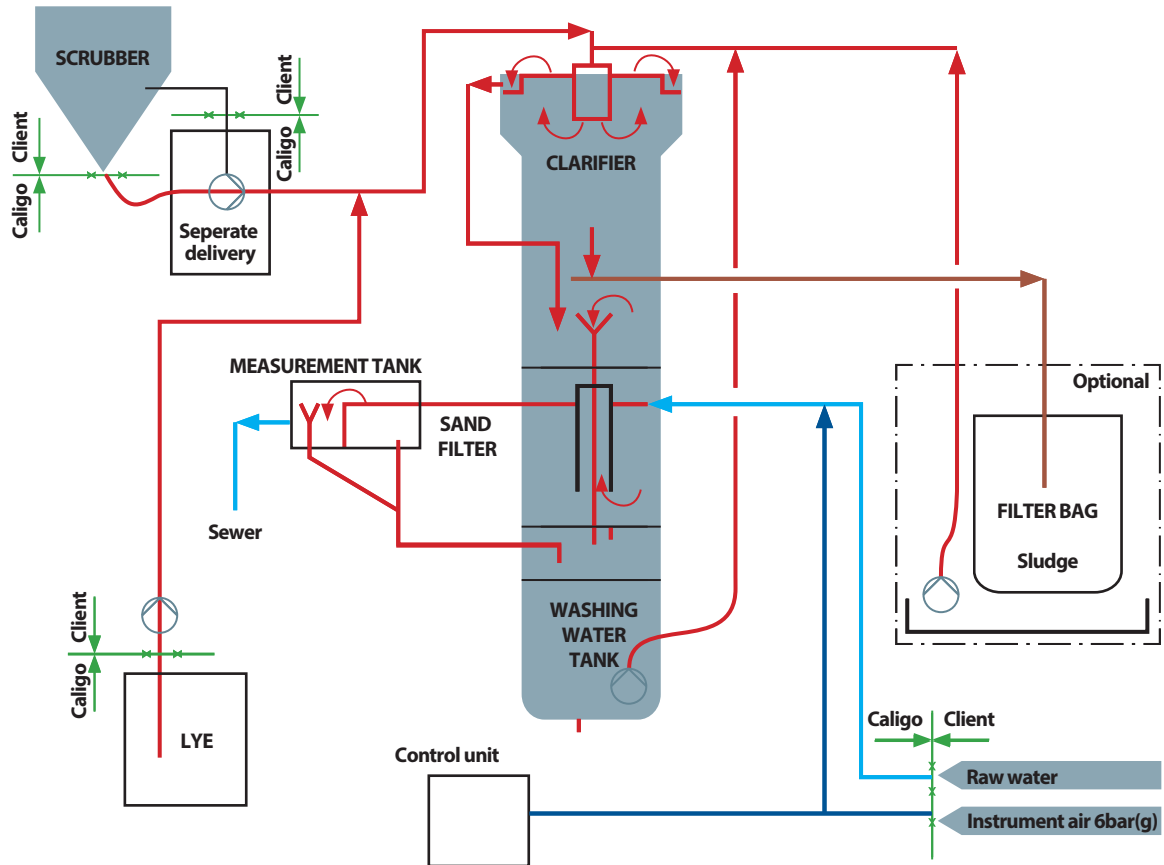
## Optional modules

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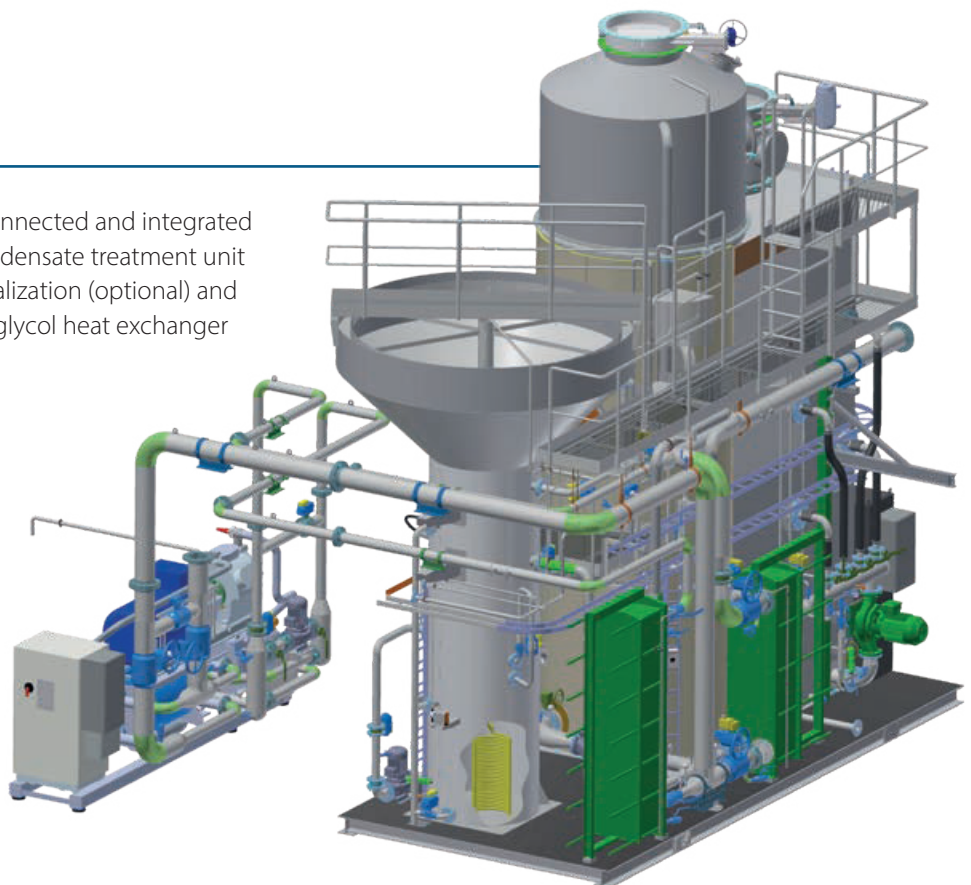
The condensate purified by the Caligo WT- and WTS-systems can be further treated in several optional modules.

- › The Caligo NxB Condensate neutralization
- › The Caligo CC B Condensate cooling by integrated glycol heat exchanger
- › The Caligo HM B Further treatment of the condensate, for example heavy metal precipitation and post-neutralization
- › The Caligo SSxB Sludge bagging and drying with filter bag

# Caligo WT Condensate treatment system

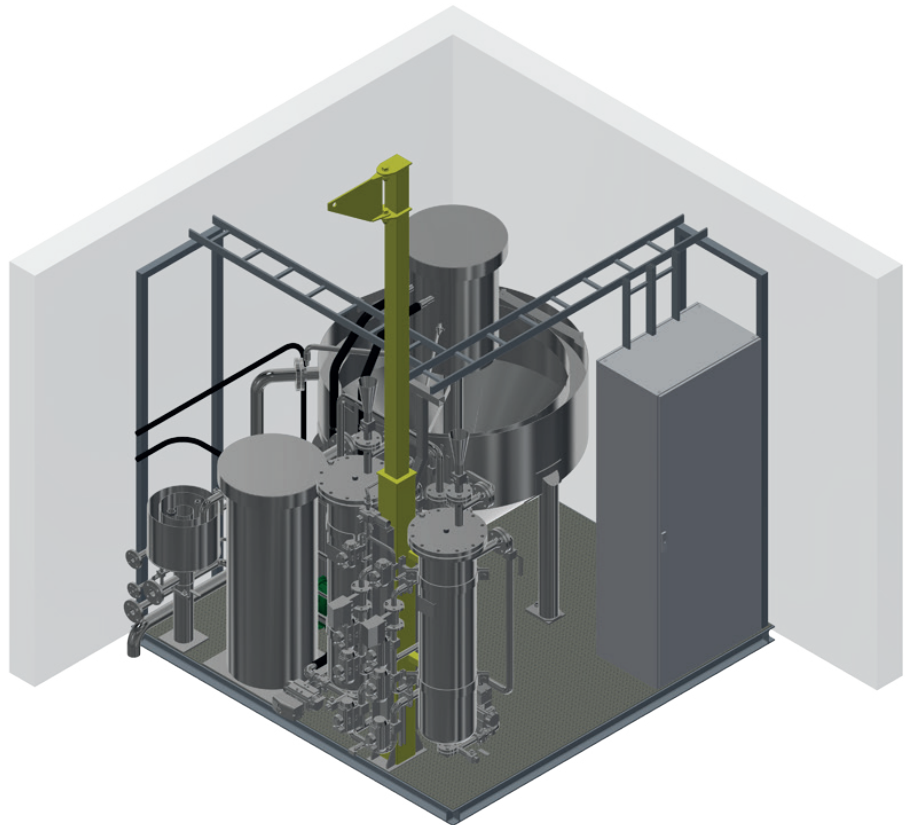


Caligo WT condensate treatment unit connected and integrated to a scrubber with a heat pump. The condensate treatment unit is equipped with Nx B Condensate neutralization (optional) and CC B Condensate cooling by integrated glycol heat exchanger (optional)



# Advantages of the Caligo WTS-system

- › Small space requirement
- › Low energy consumption
- › Movable unit
- › No chemicals needed
- › High flow velocity
- › No disposable filters  
→ no need for filter change
- › Automatic self-cleaning
- › No need for raw water during cleaning
- › The maintenance of the system is kept at minimum

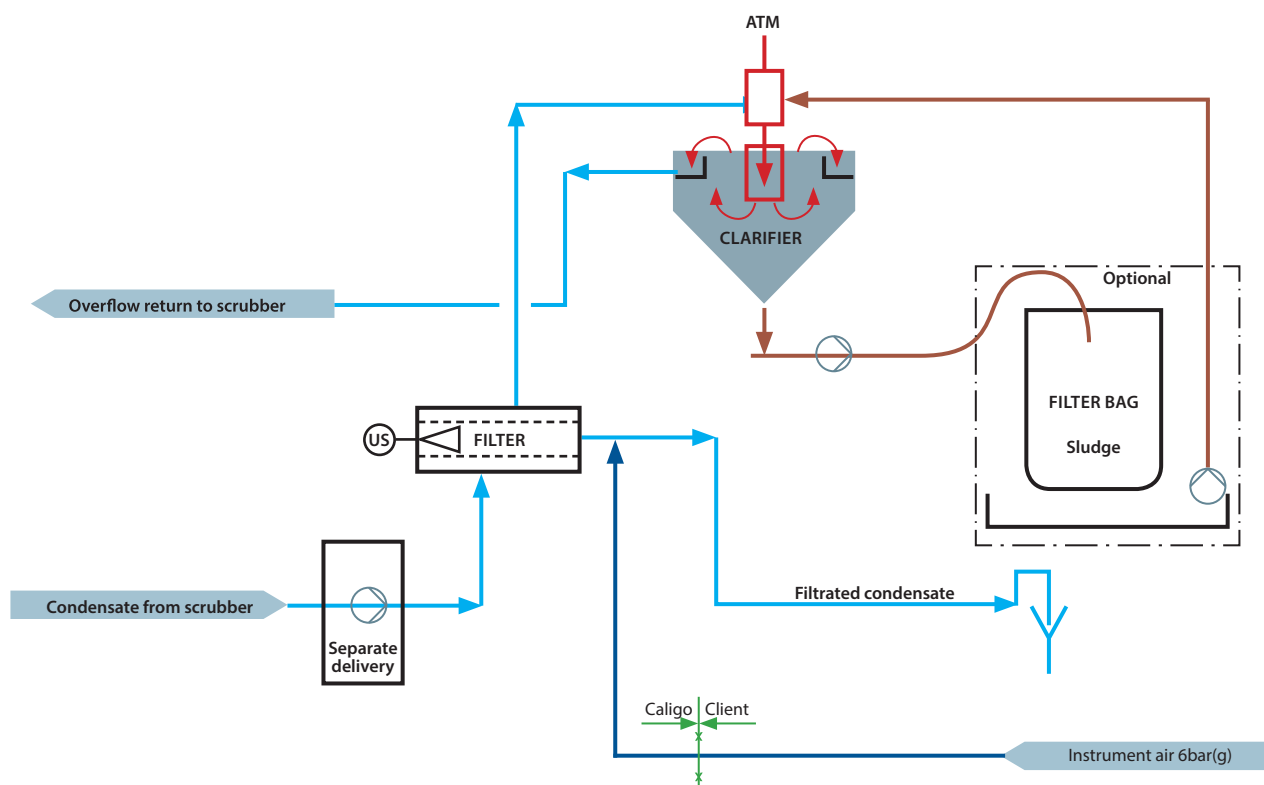


## Optional modules (cont.)

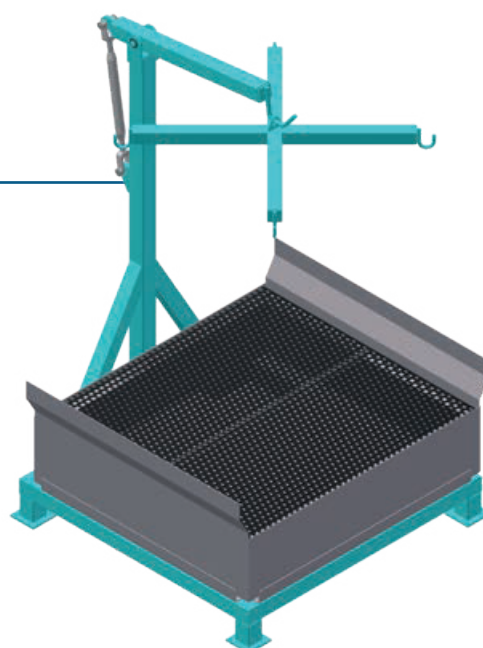
Caligo Industria condensate treatment unit containing two WT condensate treatment units and a HM B Heavy metal precipitation and post-neutralization module (optional).



# Caligo WTS Condensate treatment system



The SSxB sludge bagging and drying unit equipped with a safety tank (optional).



## CLEAN EFFICIENCY

We develop, market and sell product and system solutions for the purification of flue gases in the energy and processing sectors, for the utilisation of waste heat from processes , and for industrial shut-off and control dampers worldwide.

All our solutions are delivered as factory assembled and tested products. Caligo solutions have been extensively productized. Expensive field installation projects are no longer needed.

Our offices are located in Turku and Jyväskylä, Finland. Please, do not hesitate to contact us to tell us about your specific challenges. Our highly skilled experts will choose the best solution from our product range to meet your demands.

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