

## BENEFITS

Capacity increase  
Emission reduction  
Energy efficiency  
Fuel saving  
Postponing boiler investment  
Recovering of waste heat

# CASE PARTICLE EMISSION REDUCTION

## Energy utility

#districtheating #emissionreduction  
#morepower #savingfuel #decreasingCO2

A district heating utility planned to use wet, even 60 m-% wood chips in their new 10 MW district heating plant. Instead of investing to a flue gas filtering system, the utility decided to install a Caligo CSx-PHP scrubber with integrated heat pump and enhanced scrubbing module.

As result the particle emission of the production could be limited to under  $40 \text{ mg/Nm}^3$  and heat recovery percentage increased about 35% (up to 3–4 MW). Electricity consumption of the system stayed in very low level, being max.  $160 \text{ kW}_e$ .

The Caligo CSx-PHP system has been running since the year 2015 without any major problems. By following the service program, the performance of the system has stayed in high level throughout the years.

Caligo scrubbers, with or without integrated heat pump, are delivered always as factory tested Plug and Play units, including all HW&SW needed to autonomous control of the unit. Site time during installation of CSx is only a few days.



Caligo Industria Oy is a Finnish CleanTech company, who markets and sells product and system solutions for energy recovery and purification of flue gases in the energy and processing sectors as well as for the utilisation of waste heat from the processes. Caligo is a part of Swedish Addtech Group.

Caligo Industria Oy | [info@caligoindustria.com](mailto:info@caligoindustria.com)  
[www.caligoindustria.com](http://www.caligoindustria.com)