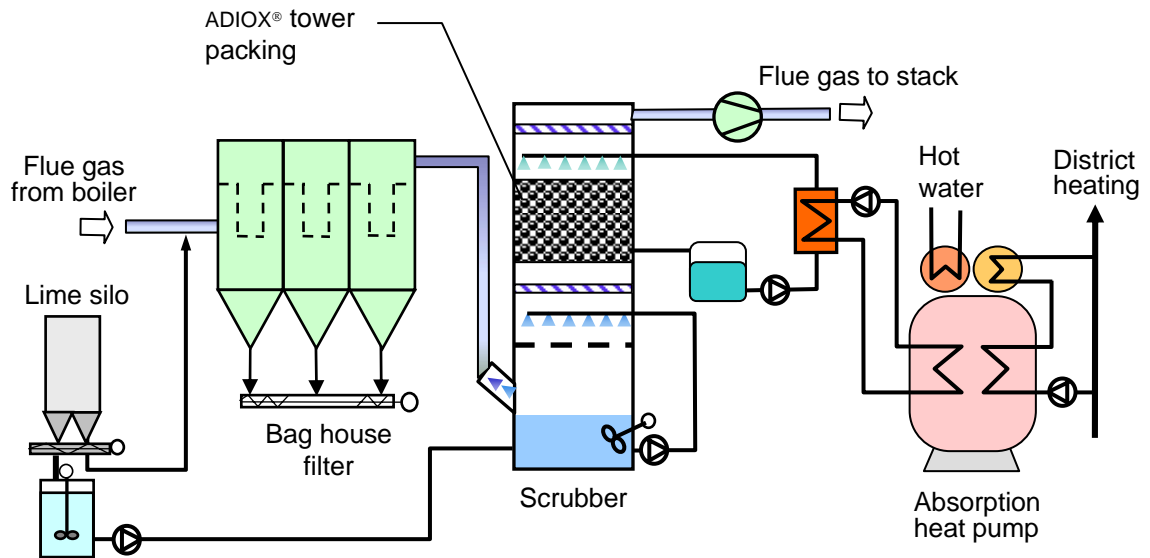


Flue gas treatment with integrated dioxin removal by ADIOX[®]

**The Hedenverket Waste-to-Energy
Plant at Karlstad, Sweden**





General aims:

The Hedenverket municipal waste incineration plant in Karlstad, Sweden, has been upgraded to fulfil the new EU waste incineration directive on emission limits. Another important feature enabling investment to be recouped in just a few years, is energy recovery by gas condensation, comprising a scrubber condensing stage and an absorption heat pump.



Description:

The 17 MW_{th} waste incineration boiler plant had only a (fabric) bag house filter with prior additive injection for acid removal. The efficiency of the filter dictated additional cleaning systems and after considering various solutions, the client, Karlstad Energi AB, decided to install a scrubber-based system from Götaverken Miljö AB.

The cleaning requirement included reduced emissions of HCl, SO₂, HF, NH₃ plus heavy metals.

From the bag house filter, the gas enters the lower section of the scrubber, which is designed as an open-type Ca(OH)₂ scrubber section. Most of the cleaning takes place here. The second stage consists of condensation tower packing with the ADIOX® material, providing additional dioxin capture.

This condensation system recovers energy from flue gas through an absorption heat pump system. Up to 5 MW of heating power can be recovered. The second section also serves as a final polishing stage to meet final limits.

