Background and Aim
Fibre sludge and activated sludge are two large and costly waste streams from the pulp and paper industry, that are often dewatered and incinerated at low or no energy gains. The aim of this study was:
1. To show that AD of kraft mill fibre sludge and activated sludge is possible
2. To achieve process conditions applicable for full-scale implementation, i.e. decreasing the hydraulic retention time (HRT) and increasing the organic loading rate (OLR).

Material and Methods
• Two lab-scale reactors (4L; R1 and R2) were run for 800 days.
• Fiber sludge and activated sludge were sampled from a kraft pulp and paper mill in Sweden.
• Reactor sludge was concentrated by centrifugation and returned to the reactor.
• Macro-nutrients (N, P) and trace metals were supplied from the start of the reactor experiment.

Conclusions
• Kraft mill fibre sludge and activated sludge was successfully co-digested at low HRT in a CSTR with sludge recirculation.
• Additions of Mg and K were needed for a stable process, and the ratio of Ca:Mg was important.
• Methane production reached 230±20 NmL per g VS at a HRT of 4 days and an OLR of 4 g VS/L-day.
• Foaming was abated by short but frequent mixing.

Future implications
• Our study shows an important possibility of applying AD on two costly waste streams in the pulp and paper industry. This gives an opportunity for the mills to decrease waste treatment costs while producing energy-rich methane gas.