

Effektivt resursutnyttjande av massa och pappersindustrins restslam och fosforåtervinning och reduktion av askrelaterade problem genom samförbränning

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Overall purpose

- To more efficiently utilize the energy content of residual sludge from the processes in the Nordic pulp and paper mills.
- Through improved co-combustion, exploit the potential for more efficient combustion in the biofuel boilers in the Nordic mills that are found in several of the residual sludge fractions.
- To recycle and/or utilize the phosphorus contained in the sludge, especially biosludge.

**THEORETICAL MODELLING AND
LABORATORY EXPERIMENTS
CONSISTENT WITH RESULTS
FROM INDUSTRIAL SCALE
DEMONSTRATION**



Summary of results

- Thermodynamic equilibrium calculations: Mixtures containing only bark and biosludge are not optimal from a slag formation perspective.
- Lab-scale: Most promising mixture containing 50% ds bark, 0%ds recycled-fiber reject, 30% ds stem wood and 20%ds biosludge
- Industrial scale: A 50 per cent increase in the amount of sludge, did not cause any major problems in combustion or any major difference in the composition of the ash.
- The fraction of P in the ash was low for all cases, P constitutes only 3.5-4 mole % of the ash compared to the other major ash forming elements. High proportion of Ca, Al, and Si in the bio sludge.
- Leaching properties unaffected.



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SAMVERKANSPARTER



FINANSIÄRER



**BODENS ENERGI • SCA OBBOLA • RAGN-SELLS • DÅVA DAC • D-TOX • PITEÅ SÅG OCH HYVLERI • GEOGEN SPINCHEM • PITEÅ SCIENCE PARK
LULEÅ RENHÅLLNING • ENVIX • ROBERTSFORS KOMMUN • NORDMALING KOMMUN • BODENS KOMMUN**