

Completely Integrated Solutions
for the Pulp and Paper Industry

SIPAPER^{CIS} Reject Power

Turning rejects into profit

Your Success is Our Goal

SIEMENS

Industrial Solutions and Services

SIPAPER^{CIS} Reject Power is a solution for paper manufacturers for extracting energy from waste which must otherwise be disposed of at high cost. It involves the controlled burning in metered batches of all combustible rejects occurring in a paper production process based on wastepaper. Even waste with high moisture contents can be used, which is a particularly useful feature. SIPAPER^{CIS} Reject Power can be used for burning substances with a fuel water content of up to 50%. And thanks to a supplementary firing system, it's even possible to burn waste with far higher moisture contents.

The challenge

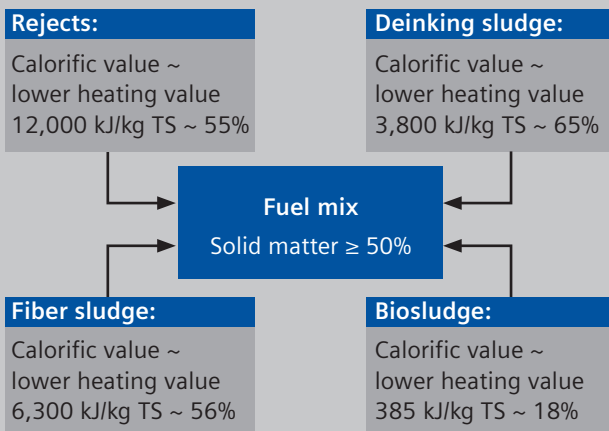
The waste dumping and disposal regulation that came into force in Germany in June 2005 requires a change in the waste disposal channels in the paper industry, since to a certain extent it prohibits dumping in landfill sites. As a result, rejects are now separated and processed to such an extent that they can be used for the most part for heating purposes. However, actual disposal is still carried out cost-intensively by external contractors.

Also, as a sector that uses a considerable amount of energy, the paper industry is especially affected by

the large increases in energy costs. Because of the huge competition in the paper sector, these costs cannot easily be passed on to the customer. In fact, just the opposite is the case, as there is even a current trend towards cutting prices for customers.

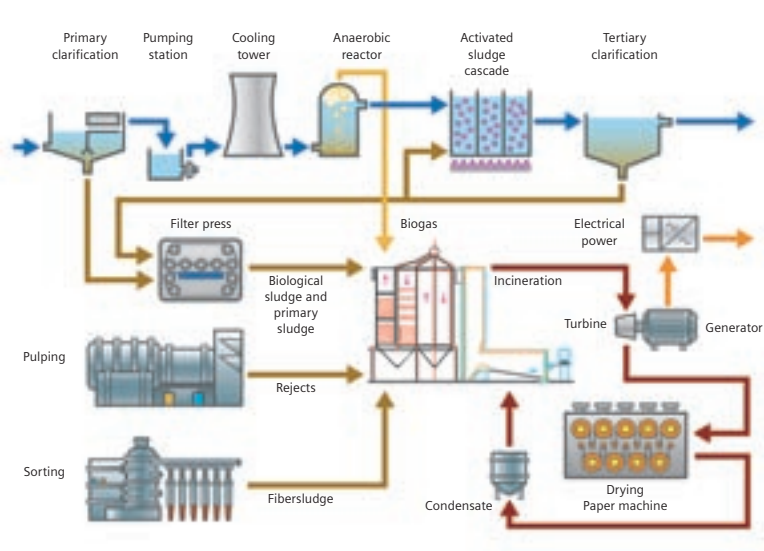
In view of this situation, how can disposal channels be optimized so that disposal by third parties can be eliminated as a cost factor? And how can rejects be used to the best effect as an energy source to help offset rising energy costs?

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Four good reasons for SIPAPER^{CIS} Reject Power

- Lower energy costs through combined heat and power – simultaneous generation of electricity and heat for production or for steam generation
- Savings in disposal costs
- More flexibility and adaptability despite different types of reject
- Environment-friendly due to less greenhouse gases – reduction of CO₂ through the combustion of the biogenic components of the residual substances



SIPAPER^{CIS} Reject Power concept: The use of rejects coming from paper production and its auxiliary processes in a reject-designed incinerator in order to generate steam for the paper machine drying section or power in a heat exchange process.

Our solution

SIPAPER^{CIS} Reject Power converts residues into energy and process steam using the combined heat and power principle, and turns the cost-intensive problem of waste disposal into an energy-winning solution. ROI analyses and operating plants confirm the short payback periods for investments.

The residues

Combustible residues include rejects from coarse and fine sorting, as well as fiber sludge and biosludge. By determining their energy content in the laboratory,

an optimum fuel mix can be created based on the physical values and the quantities of the residues. The use of wood waste, for example, in an existing reject incinerator at Mayr-Melnhof board mill makes it possible to even use sludges with a moisture content of more than 80% without back-up firing.

The process used at Mayr-Melnhof board mill in Hirschwang, Austria

1. Pulverization

For the firebox fuel feed system the supplied residue material is reduced to a specified size by pulverizing it and passing it through a filter with a hole diameter of 40 mm². Metallic components are ejected by means of a metal detector and magnets positioned over the conveyor belt before and after comminuting.

2. Transport

Conveyor systems feed the comminuted material to the fuel hopper, which acts as a buffer for bridging periods when maintenance is being carried out on the fuel conveyor system and on weekends when the plant is manned by a minimal workforce. The fuel is then fed by means of a hopper discharge device into the receiving shaft for metering, and from there via metering screws to the individual collecting spiral conveyors. The metering screws produce the required fuel mix and supply the fuel feeder, which operates by means of an impeller directly via a spiral conveyor.

3. Combustion

The built-in gas burner can be used as a back-up burner for burning fuels with a solid matter content of less than 50%. Other dry waste fuels, such as wood waste, can also be added to the mix. This is also possible if the process conditions change. The injected fuel is distributed evenly over the grate, with partial drying of the fuel taking place already in the airborne phase. A particular advantage of this process is the largely homogenous red-hot layer, which guarantees optimum combustion. The exhaust gases produced are cleaned by means of a flue gas purification system.

www.siemens.com/paper

SIPAPER^{CIS} – Completely Integrated Solutions for the Pulp and Paper Industry

As a comprehensive industry-specific solution for the pulp and paper industry, our SIPAPER^{CIS} product family integrates all the products and services you need for sustained maximization of your plant's performance.

For each particular task, a solution has been defined that

- **horizontally** improves all processes – from pulp to finished paper
- **vertically** integrates the company's information flows end-to-end, helping corporate management to make better-founded decisions
- and **chronologically** enables optimized maintenance and comes with assured further development over the whole life cycle of your plant.

Due to this unique combination of horizontal, vertical and life cycle dimensions, our solutions all carry the genes of an exhaustive and sustained plant productivity in their very core.

For more productivity. More performance. More power. Completely Integrated Solutions from Siemens.

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CIS = Completely Integrated Solutions*

The information provided in this brochure contains merely general descriptions or characteristics of performance which in case of actual use do not always apply as described or which may change as a result of further development of the products. An obligation to provide the respective characteristics shall only exist if expressly agreed in the terms of contract.

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