

SUCCESS STORY

High-quality separation technology in urban mining for Brantner Environment Group GmbH, Austria



brantner
ENTSORGUNG. FACILITY SERVICES

CO₂-minimiert



SEPARATION

HIDDEN TREASURE, ZERO WASTE

ENHANCED SEPARATION SYSTEM FOR A
CUTTING-EDGE RECYCLING PLANT

ANDRITZ

ENGINEERED SUCCESS

The challenge

Improving the recycling process from waste incineration

The Brantner Environment Group GmbH is a waste management company headquartered in Austria and operating in Central and Eastern Europe. It runs the first plant in Europe to use a special process in order to improve the results of the recycling process by maximizing the recovery rate of valuable materials and minimizing/eliminating the amount of remaining waste.

A significant amount of waste ends up in waste incineration plants, and the remains left after incineration are known as slag. This slag is processed

using the Brantner Wet Slag (BWS) method, which removes and washes the valuable metals from the waste incineration slag. Salts and fine components are then washed out of the slag and pumped into an ANDRITZ water processing system together with the wash water. The muddy process water is drained in an ANDRITZ container plant using a specially modified decanter centrifuge. The main challenge was to determine the best operating conditions and set-up for the decanter centrifuge within a very wide and constantly changing range of wash water qualities.



Customized ANDRITZ container plant for urban mining



Our solution

A decanter centrifuge designed to work around the clock

ANDRITZ Separation specialists worked together to find the ideal solution for this innovative urban mining project, handling everything from the concept to laboratory tests and onsite testing with a mobile container plant, through to producing and installing the final, customized dewatering plant. An ANDRITZ decanter centrifuge D was modified to allow for continuous operation based on very different solids inlet concentrate and cleaning the circulating water. The high separation quality achieved by the decanter centrifuge means that there is no contaminated water requiring disposal, while the consumption of fresh water has been reduced considerably by applying the ANDRITZ process. Besides the decanter

centrifuge having to operate with highly variable wash water quality, abrasion presented a specific challenge on this application. ANDRITZ Separation managed to overcome this by developing special wear protection for specific decanter parts (inlet feed box, outlet nozzles), based on its decades of experience in abrasive applications in, for example, mining and minerals. 2,500 kg/h of solids are continuously fed into the ANDRITZ container plant, controlled via a solids measurement device. This guarantees continuous operation with automatic adjustment of the general decanter parameters. The processed and cleaned ash is dewatered to a dry matter content of around 50% and can be transported on a wheel loader.

Results

Output guarantees met and surpassed

The ANDRITZ decanter centrifuge has been in use since summer 2015 and has meant that the whole recycling process is now 100% closed. Before installing the decanter centrifuge, the wash water was only treated in a sedimentation tank and the slag was deposited at the Brantner site, whereas now 100% of the urban waste is reused – first by incineration (producing heat and electrical energy), then by mining the valuable minerals (copper, aluminum, etc...) from the ash, and finally by dewatering the remaining wash water to produce a

material that can be used in road construction in certain countries (official certificates missing from government). Having ANDRITZ Separation as a local supplier in Austria was another benefit for Brantner as this ensured the availability and proximity of services. What's more, the solution has delivered reduced downtime and excellent reliability thanks to continuous operation, coupled with low energy consumption and low operating costs. The highest quality of the end products is guaranteed thanks to the closed and self-venting system.

“By working together, the Brantner Group and ANDRITZ have taken a further step towards a zero-waste society with their process water treatment system for waste incineration slag. For more than a year now, the plant has stood as a model of state-of-the-art urban mining.”

GERHARD STOCKINGER

Business Development & Ressource Management at Brantner Environment Group GmbH



WHAT'S YOUR SEPARATION CHALLENGE?

ANDRITZ Separation is the world's leading separation specialist with the broadest technology portfolio and more than 2,000 specialists in 40 countries. For more than 150 years, we have been a driving force in the evolution of separation solutions and services for industries ranging from environment to food, chemicals, and mining & minerals. As the OEM for many of the world's leading brands, we have the solutions and services to transform your business to meet tomorrow's changing demands – wherever you are and whatever your separation challenge. **Ask your separation specialist!**

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