SELFRAG revolutionizes incinerator slag recycling. First commercial system will be installed in Switzerland.

Kerzers, December 2nd 2014. SELFRAG AG, specialists in high voltage fragmentation and headquartered in Kerzers, Switzerland, has developed a ground-breaking process for the commercial recycling of incinerator slag. The first system will be installed in Posieux, Canton Fribourg, and will ready for operation at the beginning of 2016.

Ferrous metal after processing and sorting

Slag (or bottom ash) contains high levels of ferrous and non-ferrous metals. This valuable material content can be 50 to 100% higher than in natural mineral deposits (e.g. copper mines). The high temperature during incineration causes an agglomeration of the different fractions which, until now, has made it difficult to economically recover the valuable fraction.

SELFRAG uses a high voltage fragmentation process to separate the recyclable fractions. Electrical discharges produced by high voltage pulse generators are comparable with lightning. These artificial lightning discharges generate powerful shockwaves that cause efficient separation of the slag fractions. The quantity and quality of recycled materials is significantly improved, due to the selective nature of this preferential fragmentation method.

By utilizing the new system at its incinerator operation in Posieux, SAIDEF expects to increase recovery of ferrous and non-ferrous metals by more than 100% and reduce landfill requirements by up to 30%.

Albert Bachmann, CEO of SAIDEF, reported on the VBSA symposium. "Extensive tests convinced us of this new technology," he said. "We can double our recovery, especially for non-ferrous metals. The recovered metals are cleaner and will generate a higher sales price. Additionally, about 5 to 10% of the total slag volume is completely cleaned, fulfilling stringent Swiss regulations on inert fractions and can be potentially used as aggregates in road construction, which opens up another income source. The metal recycling, together with the decontamination of the remaining material, will reduce the waste to be landfilled by 20-30%, leading to a cost saving of CHF 50 per tonne. There is an additional benefit through the reduction of fossil CO_2 emission from the waste incineration process, a mandatory requirement in Switzerland from 2020."

Untreated Slag

Frédéric von der Weid, CEO of SELFRAG stated: "SELFRAG is a recognized pioneer in the field of electrodynamic fragmentation. Our vision is to establish an economical recycling method for the respectful use of the world's resources. Thanks to our new slag treatment system the metals from the waste in Fribourg will be re-used instead of being landfilled. We hope that this project is a paradigm shift and will convince other cities too."

The system in Posieux, with a capacity of three tonnes per hour, will be installed in partnership with Frei Fördertechnik. "The partnership between SELFRAG and Frei Fördertechnik allows us to offer a combination of state-of-the-art technology with proven systems engineering capabilities within the incinerator and landfill industries," said Collin Frei, CEO of Frei Fördertechnik. "The partnership enables optimized processing, sorting and conveying of bottom ash, delivering immediate financial benefits and setting a new standard for environmentally friendly treatment of bottom ash."

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SELFRAG AG is specialized in developing designing and commercializing high voltage pulse systems and plants for selective fragmentation of solid materials in mining, recycling, and solar industries. The company was founded in 2007 and is headquartered in Kerzers, Switzerland. It has approximately 30 employees

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