

**"We don't study technical problems.
We solve them!"**
UMTEC

Metals Recovery from Waste Incineration Plant MWI Bottom-ash

Profit directly from our
developments:

Processing of MWI bottom-
ash with a dry-mechanical
process



Fig. 1: pilot installation for bottom-ash processing; operator UMTEC / von Roll Inova / ERAG

Subject: metal-recycling

The bottom-ash from waste incineration plants contains much metal despite separate collection still. By recovering these metals, a great ecologic advantage is gained for little money.

Technically feasible

The recovery of metals, even if they are present in small pieces, is technically feasible; this was shown in our pilot project.

Economically acceptable

The processing of MWI bottom-ash practically covers its costs, mostly through the proceeds from the sale of non-ferrous metals.

Ecologically sound

Our studies have clearly shown that the environment is improved by way of metal recycling: Not only in Switzerland, but above all in the ore-producing countries.



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Background

A conclusion drawn from our research was, that a significant potential of resources lies in the combustion residues of Swiss waste incineration plants (MWI bottom-ash). These contain unexpectedly large quantities of recoverable metals, in particular iron (10%), aluminium (2%) and copper (1%). Until now, the metals, together with the bottom-ash, were brought to waste sites and were thus lost for any recycling.

The metals recovery by way of the processing of MWI residues is profitable with the sales of recovered metals and due to the saving of disposal site costs. Approximately 70% of all Swiss MWI bottom-ash is now being processed for metals recovery.

From the pilot trial...

Large amounts of metals can be easily recovered from MWI - bottom-ash in an industrial-scale technological manner. This has been shown in a pilot trial at the beginning of 2003. This pilot trial was carried out by UMTEC together with the two industry partners, *Von Roll Inova AG* and *Eberhard Recycling AG*. Financial support was granted by the CTI. In this project it was found that the efficiency of the metals recovery is above 67%.



Fig. 3: the first stationary installation of the Swiss operator Waste disposal site Teuftal AG



Fig. 2: the first mobile installation of the Swiss operator MMA (Schons / Lienhard)

Cost / use - optimal solution

If all Swiss MWI bottom-ash (640'000 tones yearly) was processed, about 56'000 tonnes of metals would be recycled. In comparison: the quantity of metals, which is recycled through separate collections of aluminium cans, tin cans, batteries and electronic waste from our municipal garbage, would indeed be doubled.

Energy is saved by way of this (equivalent of about 10'000 tons of heating oil), and emissions are avoided, in particular in the ore-producing countries. Indeed, the yearly production of 400'000 tones of mining waste containing heavy metals, and the emission of 400 tons of sulphur dioxide may be avoided alone of account of the recovery of copper from the bottom-ash.

...to the state of the art.

Innovative companies have reacted quickly to the results of our trials: around 10 industrial processing plants for metals recovery from Swiss MWI residues are in operation to date. The investment volume of about 15 million Swiss francs for processing of MWI residues created around 24 new jobs in Switzerland.

Partner for industry and authorities

UMTEC plays a key role as to metals recovery from municipal waste. As a highly competent and independent institute, we are partners to authorities and industry.