RE: SOURCE

Metallurgical treatment of fly ashes from waste incineration

The project has clarified the conditions for establishing the first industrial plant for treatment of fly ash from waste incineration based on the metallurgical process ArcFume. The purpose is to utilize a hazardous waste within the country and return its values to the circular economy.

Fly ash from waste incineration contains dioxins, mercury and other heavy metals and constitutes a danger for humans and the environment. Of the amount generated at Swedish incineration plants 50% is exported to Norway, and the rest is deposited in Sweden. There is a broad desire for a more sustainable management of fly ash.

This call RE:Source is intended for more efficient use of the Earth's resources and minimize waste, and the government has an agenda that Sweden will become the world leader to utilize and minimize waste. A more sustainable handling of fly ash would be a big step in that direction. This ambition is also communicated by incineration plants, industry organizations, economic associations, authorities and researchers.

ScanArc proposes metallurgical treatment of fly ash in the process ArcFume. The proposed method converts fly ash to a usable mineral product and extracts precious metals as a concentrate. The treatment method means that what is today a hazardous waste can be utilized within the country and its values returned to the circular economy.

Competitive despite the price

The goal of the project was to clarify the conditions for establishing the first industrial plant for treatment of fly ash based on the metallurgical process ArcFume. To reach the goal of the study knowledge was gathered from several parties involved in the handling of fly ash.

A business plan was made. The treatment cost is ~ 15% higher than the current cost of landfill. Many stakeholders say they realize a more sustainable method may not cost less than today's landfill, and a slight increase in cost could be accepted. Therefore, the method is competitive, especially if landfill costs are expected to rise.

Crucial to find a receiver

Finding a receiver of the mineral product has been identified as a critical point, and to handle this issues in an early stage entails specific advantages: you can control and design the properties of the mineral product and the location of the plant is not determined.

One can thus consider the transport of fly ash to the plant, and transport of mineral products from the plant. The facility can be positioned strategically with respect to exploitation, road construction and other activities consuming large amounts of material.

Project facts

Project name: Metallurgical treatment of fly ashes from waste incineration

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