Sorbacal®

Waste-to-Energy

CASE STUDY NR 28 - BELGIUM

Sorbacal® CDS: Exceeding waste incineration BREF with additional operational benefits

Biostoom Oostende

THE CHALLENGE

Biostoom Oostende is a Waste-to-Energy (WtE) plant that recovers heat and electricity from the incineration of non-recyclable industrial waste whilst respecting the European limits for gas emissions.

The main acid gas emitted is HCl with some SO_2 present. The abatement of HCl is well controlled, however, Biostoom wish to further optimize the flue gas treatment, especially the SO_2 emissions and material handling/flowability.

The challenge with SO_2 control was two-fold.

Firstly, to reduce and stabilize the values to comfortably exceed the new WtE BREF.

Secondly, to control periodic SO_2 inlet peaks promptly and effectively. This is important considering the trends in fuel composition leading to lower HCl and/or higher SO_2 inlet values.

THE LHOIST SOLUTION

Sorbacal® CDS is an innovative Lhoist Ca-based product developed for Circulating Dry Scrubber (CDS) technology to boost process efficiency as well as improving operating and maintenance costs for Plant Operators.

The overall acid gas abatement performance was enhanced by increasing the water injection rate in the CDS. Transient SO_2 inlet peaks were controlled by further increasing water injection rates during those periods. This effective and fast responding system achieved reliable low acid gas emissions throughout different operating conditions and fuel mixes.

The solution was possible due to the unique properties of Sorbacal® CDS with improved flowability and double moisture handling capacity compared to standard hydrated lime. The excellent flowability of the product contributed to lower differential pressures over the bag filters.

THE BENEFITS

The efficiency of Sorbacal® CDS allowed acid gas abatement improvements with lower and stable emission values that exceeded future BREF requirements. The overall flue gas treatment system was significantly optimized, yielding immediate and long-term operational benefits.

Key benefits brought by Sorbacal® CDS:

- Lower and more stable SO_2 emissions, including short periods (peaks) of high SO_2 inlet values.
- 20% reduction of sorbent consumption and 15% of residue generation.
- 10% lower differential pressure over the bag filters.
- Wider fuel flexibility including the use of more sulfur containing fuels.
- Reduced maintenance costs.

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Find the best solution for your business by contacting one of our experts in your country or region via the contact page on www.lhoist.com.

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