Sorbacal®

CASE STUDY NR 3 • POLAND

OPTIMIZING SO_2 REMOVAL BY BOOSTING A SEMI-DRY SYSTEM

THE CHALLENGE

A power plant in Poland used a semi-dry process to remove acid gases. But stronger regulations on acid gas emissions, particularly SO_2, mandated emission levels below 400 mg/Nm^3. Management recognized that the efficiency of the plant's flue gas treatment (FGT) process needed to be significantly improved. Looking for a cost-effective total solution, they considered investing in a wet FGT process.

Lhoist was asked to:

- define a process compatible with the flue gases to be treated and within the existing plant environment
- organize a proof-of-concept trial
- carry out full-scale tests to confirm that SO2 reduction targets would be met
- evaluate future operating costs

THE LHOIST SOLUTION

After studying the request we proposed retaining the existing semi-dry system, which used Sorbacal® H, and boosting it with a post-dry injection of Sorbacal® SP.

The Lhoist solution included the following elements:

- determining the optimum temperature range for the reaction of Sorbacal® H and Sorbacal® SP (up to 75 °C)
- increasing the amount of water quenching to raise the humidity of the flue gas to 9% and lengthening the reaction times of the sorbents
- ensuring better reagent dispersion through separate injection ducts
- trials in cooperation with the plant technical team and the Technical University of Wroclaw
- a proposal for adapting the inadequate existing reagent dosing and injection units to run efficiently with the Sorbacal® sorbents

THE BENEFITS

The solution enabled the power plant to conform to the required emission levels without expensive investment in new wet FGT process equipment. The existing facilities were improved both in terms of reliability and efficiency.
The refurbishment primarily consisted of:

- installing equipment to ensure more accurate sorbent dosing to each duct separately
- multipoint injection into ducts for better sorbent dispersal
- replacing inefficient compressed-air sorbent conveyance with fan ducts

OUR EXPERTS CLOSE TO YOU
Find the best solution for your business by contacting one of our experts in your country or region via the contact page on **www.sorbacal.com**.

Lhoist

www.lhoist.com