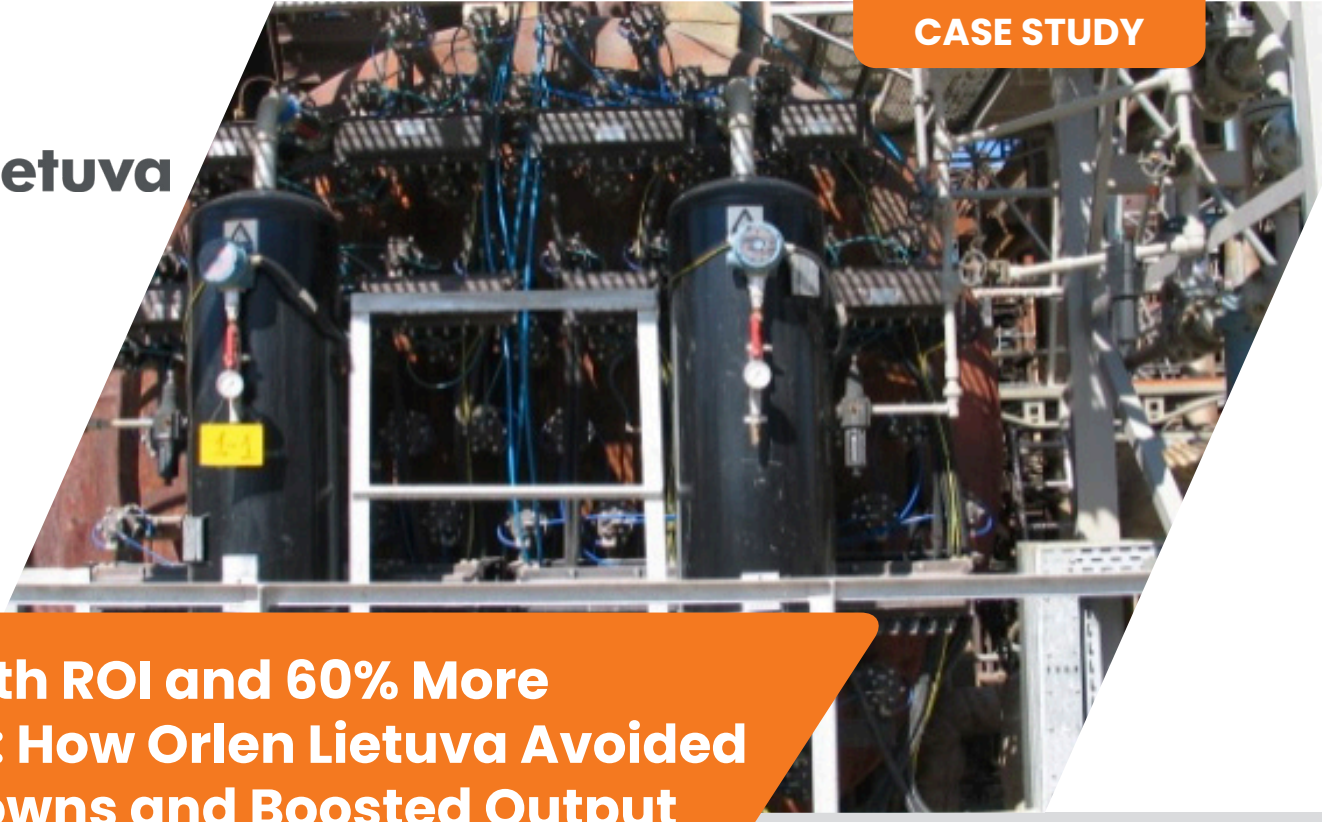
CASE STUDY

ORLEN Lietuva



3-Month ROI and 60% More Steam: How Orlen Lietuva Avoided Shutdowns and Boosted Output with Aerovit

Orlen Lietuva, Lithuania

The Challenge

Within just two months of operation, catalyst dust would fully cover the boiler tubes, drastically reducing steam output from 19 t/h to only 7.5 t/h per boiler.

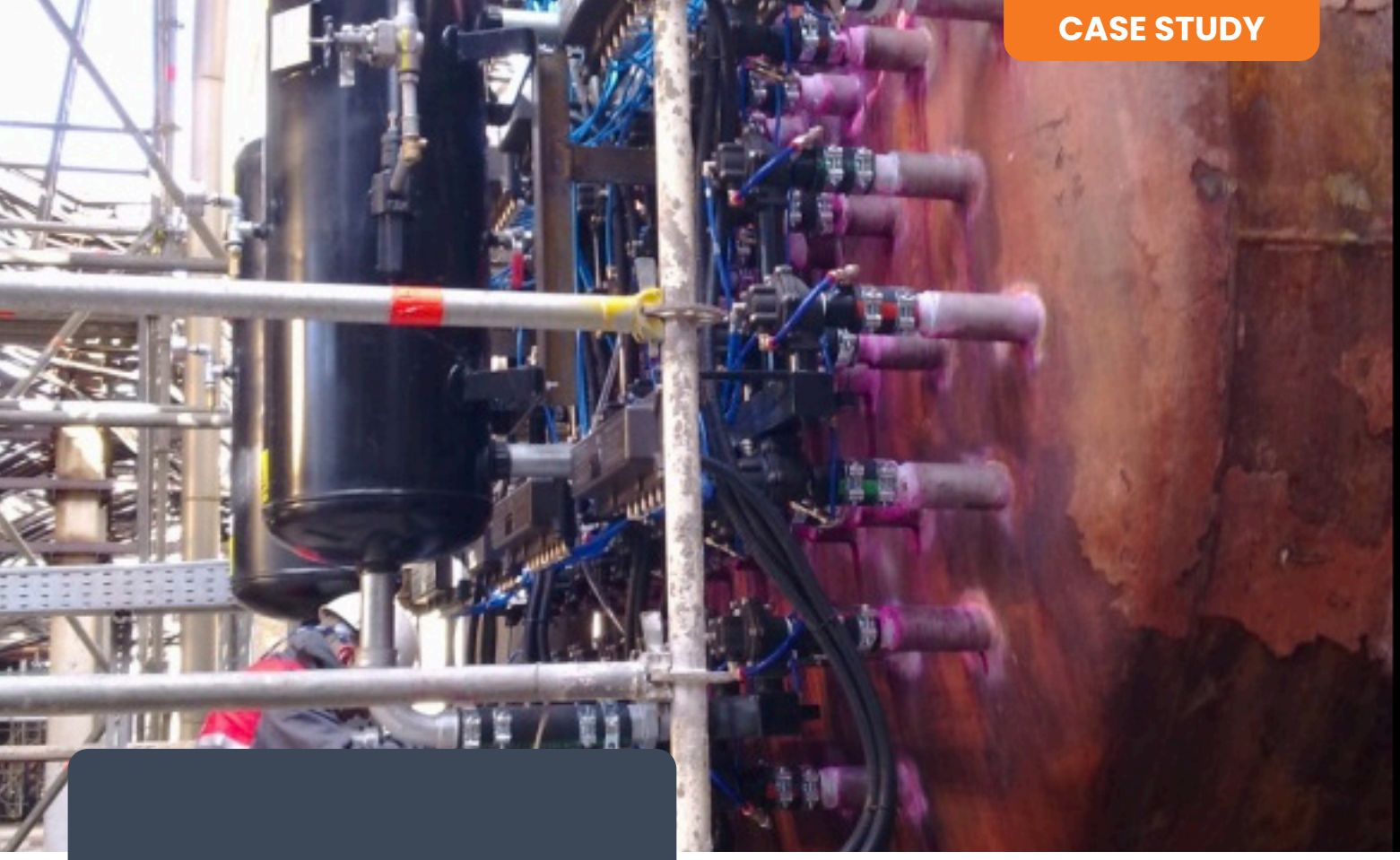
Manual cleaning was not feasible, as it would force a complete shutdown of the refinery—a highly costly and disruptive outcome. As a result, the boilers operated far below capacity, causing major inefficiencies.

50-60%
Increase in steam production

127%
Increase in operational output

3 month
Return of investment

CASE STUDY



The Solution

To eliminate dust build-up without interrupting operations, Orlen installed Aerovit ShockClean System on both boilers.

These systems were integrated into the Fluid Catalytic Cracking Unit and allowed for online cleaning, removing the need for manual intervention.

"As part of the modernization program, Aerovit Soot Blower system (Aerovit ShockClean System) were installed in the Fluid Catalic Cracking Unit at the Refinery.

The Aerovit Soot Blower sytems (Aerovit ShockClean Systems) are used to remove catalyst dust from the pipes of the heat recovery boilers KU-401/1, 2.

Use of the Aerovit Soot Blower system (Aerovit ShockClean System) for the KU-401/1, 2 led to higher steam production rates (as much as 50 to 60 percent) with a 3-month payback time for the investment.

We are happy to say that the project has been succesfully implemeted and appreciate our cooperation with Aerovit."

Mr. Viktoras Vasilavičius
(Deputy General Director for Operations)

How does Aerovit ShockClean System work at Orlen Refinery?

Aerovit ShockClean System were mounted directly on the heat recovery boilers KU-401/1 and KU-401/2. The system delivers powerful pulses of compressed air to dislodge catalyst dust from the tube surfaces. This keeps the heat transfer surfaces clean during operation, preventing efficiency loss and maintaining high steam output.

Post-installation, steam production stabilized at around 17 t/h per boiler - a significant improvement from the dust-clogged state of 7.5 t/h.

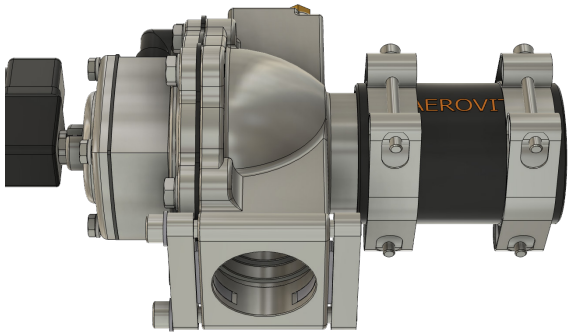
The total output for both boilers rose to 34 t/h, a gain of 19 t/h, which would otherwise have required approx. 11.6 million litres of oil per year to produce on a backup boiler.

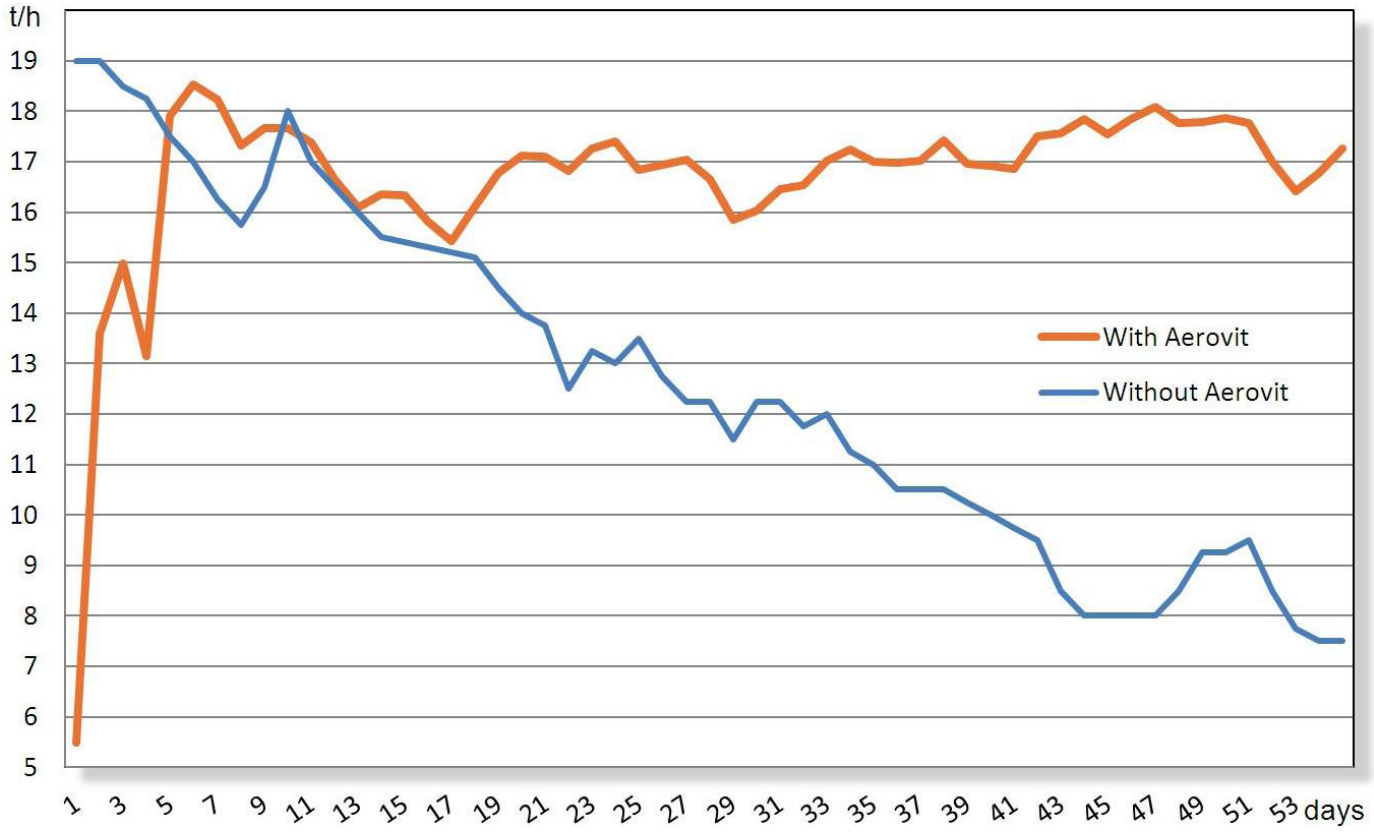
Features:

- Customized system designed to match the specific boiler design and fuel type
- Unique cooling system that protects the valve from high temperatures and corrosive flue gas
- Special sound silencer
- Low maintenance costs

Advantages:

- Payback time in 3-24 month
- Proven higher efficiency and boiler output
- Reduce manual cleaning and thus boiler shutdowns with 80-100%
- Reduce fuel consumption per produced MW
- Lower CO2 emission
- Robust design with few moving parts



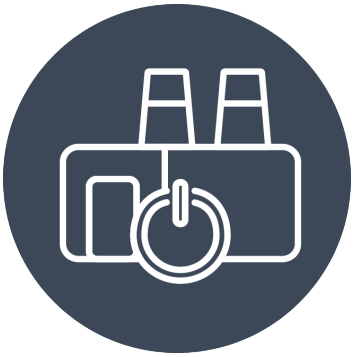


The Results

Steam Production Increase by 50-60%

Return of Investment in 3 month.

Operational output increased by 127%.



No Shutdowns Required for Manual Cleaning

Overview

Orlen Lietuva, a major oil refinery, operates two boilers critical for steam generation. Before installing Aerovit cleaning solution, catalyst dust accumulation on heat recovery boiler tubes severely reduced steam output and efficiency. Manual cleaning was not an option due to the risk of refinery shutdown.

As part of their modernization program, Orlen installed Aerovit ShockClean System on both boilers. The result was a 50–60% increase in steam production and a return on investment in just three months.