



16-Month Payback and Up to 90% Fewer Cleanings: How E.ON Sweden Boosted Efficiency with Aerovit

E.ON, Sweden

The Challenge

E.on faced challenges before installing Aerovit at their 4 boilers at plants in Värnamo, Rörvik, and Älmhult. All plants required frequent manual cleanings which led to operational disruptions, increased labor hours, and inefficiencies caused by soot accumulation.

Flue gas temperatures rose rapidly between manual cleanings, reducing boiler performance and increasing fuel consumption.

Before Aerovit

At Värnamo, Boiler 1 and Boiler 2 required cleaning every six weeks, whilst the boiler at Rörvik needed to be cleaned 10 times per year. In Älmhult, the boiler was cleaned nine times annually.



by up to
90%

Reduced manual
cleaning



15-17 month

Return on
investment
(ROI)



Stabilized Flue Gas
Temperature



The Solution

To address these issues, E.ON installed Aerovit ShockClean System on four biomass boilers across the three locations.

The goal was to reduce soot buildup during operation, minimize manual interventions, and improve overall energy efficiency.

Each installation targeted boilers fueled by wood chips and running over 5,000 hours each annually.

"For our District Heating plants the Aerovit Soot Blower system (Aerovit ShockClean System) has implied significant savings and advantages.

It also implies, that we now are completely free to clean the boilers when the weather and the personel / interest suit us."

(Operating personnel at E.ON)

How does Aerovit ShockClean System work at E.ON?

At each plant, the Aerovit system was mounted directly onto the boiler.

It works by sending short, powerful bursts of compressed air into the boiler to prevent soot and ash from settling on heat transfer surfaces. As a result, flue gas temperatures remain more stable, the boilers operate closer to optimal conditions, and the need for manual cleaning is drastically reduced. For example:

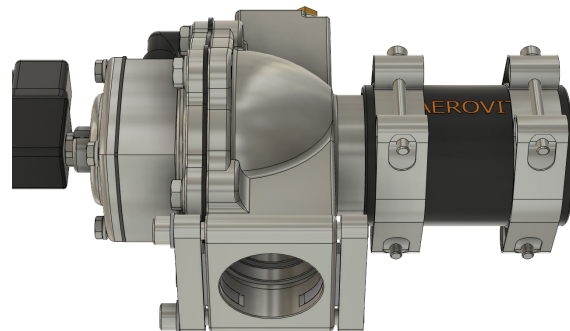
- Värnamo Boiler 1: Reduced cleanings from 6 to 1 per year.
- Rörvik Boiler 1: Reduced cleanings from 10 to 1 per year.
- Älmhult Boiler 1: Reduced cleanings from 9 to 1 per year.

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

The operating managers at all three sites reported noticeable improvements in operational flexibility and efficiency. The soot blower system allowed them to plan maintenance around staff availability and weather, rather than necessity.

After the implementation of the Aerovit ShockClean System, significant improvements were seen across all three locations:

In Värnamo, Boilers 1 and 2 required manual cleaning only once per year, compared to six times previously. The system delivered 1% fuel savings, improved boiler efficiency, and reduced manual cleaning by over 80%, resulting in a payback period of just 16 months.

At Rörvik, manual cleaning was reduced by 90%, boiler efficiency improved, and 1% fuel savings were achieved. The investment paid for itself in 15 months.

In Älmhult, the Aerovit system reduced manual cleaning by 90%, delivered 1% fuel savings, and increased boiler efficiency, leading to a return on investment within 17 months.



**Manual Cleaning
Reduced by up to 90%**



**Stabilized Flue Gas
Temperature**



**Return on Investment
in 15–17 Months**



Significant Savings

Overview

E.ON Sweden operates multiple district heating plants, including Värnamo, Rörvik, and Älmhult. All these plants faced challenges related to frequent manual boiler cleanings, increased flue gas temperatures, and decreased boiler efficiency due to ash and soot buildup.

E.ON decided to implement the Aerovit ShockClean System across four boilers to reduce manual cleaning efforts and optimize boiler performance. The investment proved successful, paying off in just 15–17 months and significantly reducing maintenance.