

The Possible Coexistence Between Local Communities and Industrial Activity

It can be done. But it requires strong analytical capabilities, rigorous control systems, and the ability to adapt. It cannot be improvised: it demands collaboration with third-party institutions, a capacity for listening, and the resources needed to reduce environmental impacts. The case of Pontenossa Spa.

Environmental protection begins with a thorough understanding of the local area and constant monitoring of the effects of industrial activities on air, water, and soil. This principle underpins the work of Pontenossa Spa, a company based in Val Seriana specializing in resource recovery through the valorization of hazardous waste that would otherwise be lost.

At the core of its operations is the Waelz process, a well-established technology that enables the recovery of steel mill dust, classified as hazardous waste. From this material, zinc is recovered – a strategic metal for numerous industrial sectors including ceramics, agriculture, construction, and galvanizing.

“Our work consists of transforming waste into a resource,” explains Dario Bonaldi, Head of the Environmental Department. “The Waelz process allows us to recover zinc while reducing the environmental impact of steel mill dust. Our objective is continuous improvement: lower emissions, greater efficiency, and higher environmental standards.”

Research Laboratory

Alongside zinc recovery, the process generates Waelz slag, which is currently managed by the company within its own storage facility.

The company considers this storage temporary while pursuing research projects aimed at identifying sustainable reuse solutions for this material, in line with circular economy principles and waste reduction strategies.

Process Monitoring

Environmental responsibility requires constant effort and attention. For this reason, controls are carried out on incoming waste, process reagents, production residues, and the air and water released downstream of the industrial process.

“We continuously monitor the raw materials delivered to our site, analyzing and selecting only those compatible with the Waelz process. Waste containing significant quantities of particularly hazardous or difficult-to-manage metals is excluded upstream,” Bonaldi emphasizes, “to safeguard the environment and ensure safety standards.”

Air Emissions Control

Protecting the local environment also involves continuous monitoring of atmospheric emissions.

The plant is equipped with abatement systems operating 24 hours a day, capable of drastically reducing dust, carbon monoxide, and nitrogen oxides released into the atmosphere.

Certain parameters, such as Total Organic Carbon (TOC), are made available in real time on the company’s website. “These are official data, also transmitted to supervisory authorities,” Bonaldi notes, “and the recorded values are well below legal limits.”

Annual 30-day air quality monitoring campaigns are conducted in the three neighboring municipalities of Gorno, Premolo, and Ponte Nossa. An analysis of more than 15 years of data provides an overall positive air quality assessment. “No effects attributable to industrial activity have been detected,” Bonaldi concludes.

Process Water Management

Particular attention is devoted to process water analysis, treated in plants that operate and are monitored 24 hours a day, every day of the year.

“Water control is essential, both environmentally and operationally,” explains Claudio Bonetti, Head of the Company Laboratory. “Through controlled physic-chemical processes, we monitor parameters such as pH and promote the separation of metals, which are recovered before the water is returned to the Riso stream.”

Monitoring is not limited to chemical aspects. For years, the company has collaborated with the University of Camerino (Macerata), which evaluates the biological health of the Riso stream, conducting analyses upstream and downstream of the facility.

“We study the presence of macroinvertebrates through the Extended Biotic Index and monitor the health status of fish fauna,” Bonetti continues. “Biodiversity is a highly reliable environmental indicator: the healthy presence of these species confirms water quality.”

Additional Monitoring

“In addition to regulatory obligations and provincial authority requirements,” says Fabrizio Panella, Chief Operating Officer, “we carry out further environmental controls and analyses. We are guided by the belief that the sustainability of industrial activity is built on transparency, prevention, and continuous improvement.”

“The data we collect demonstrate that the Waelz process enables us to protect the environment from significant quantities of hazardous waste by transforming it into resources and ensuring safe management. We work to be recognized as a concrete example of how industrial activity can coexist with the environment and the local community. We promote the implementation of circular economy processes, deploy high-quality monitoring systems, and above all maintain ongoing research and open dialogue with the territory.”