



Zato is changing the rules:

Zorba from light scrap - no hammer mill required

The telling combination of Zato's Blue Devil, SCL20 and ECS opens a new path for non-ferrous metal recovery: high purity, low operating costs, no civil works and no special permits. A concrete competitive advantage for processors of light scrap.

In the global non-ferrous metals market, Zorba has reached valuations that make it one of the most sought-after outputs in the entire recycling chain. Yet a significant share of this material continues to leave processing facilities hidden inside ferrous scrap and sold at iron prices. Not for any lack of awareness or willingness but for the lack of the right tools. Zato is changing that.

Why Zorba has become so strategic

Zorba, the mixture of non-ferrous metals obtained from scrap processing and composed mainly of aluminium, copper and zinc, is at the centre of strong and growing global demand. The energy transition, the electrification of transport and regulatory pressure on recycled content in manufactured goods are all fuelling a race for secondary raw materials that shows no sign of slowing down.

The problem is structural — and runs in two directions. A significant portion of available Zorba is locked inside light scrap, never recovered and sold off at iron prices. At the same time, the non-ferrous residues left mixed into the ferrous fraction create a separate headache: steel mills penalise every contaminated load with yield deductions, quietly cutting into the value of the iron being delivered. Two losses on the same tonne. The industry has historically relied almost exclusively on hammer mills to solve both. Powerful machines but with barriers to entry that put them out of reach of most operators.

Traditional solutions are limited

The alternatives most widely used today have limitations that affect their effectiveness in Zorba recovery:

- Hammer mills: the reference tool for ELV processing and large-scale Zorba

Zato's Blue Devil is making a big difference.

Natural evolution

Many scrapyards already run shears, shear balers and inclined shears to densify light scrap. They work well for volume reduction but these technologies cannot liberate the Zorba trapped inside, meaning that value leaves the yard for free. Zato's process lets operators recover Zorba efficiently from day one, with no hammer mill required. It is not an alternative to the hammer mill, which remains the best way to fully liberate Zorba, but is a no-brainer starting kit, fully integrable with a hammer mill whenever the operator is ready and able to invest in one.

production. They require deep foundations, significant civil works, complex permitting, high energy consumption and a minimum input volume to be

economically viable. For many operators, particularly mid-sized and smaller ones, they are simply out of reach.

- Inclined shears and baler-shears: effec-

tive for volume reduction but structurally unsuited to Zorba recovery. The compression and cutting process tends to trap non-ferrous metals inside the ferrous mass — the so-called accordion effect — rather than freeing them. The result is that non-ferrous content is sold bundled with ferrous scrap at iron prices, penalising the overall value of the material.

Zato's answer: an integrated three-stage process

Zato has developed and refined an integrated line that enables high-purity Zorba recovery from light scrap without a hammer

Zato's scrap cleaning line for non-ferrous metals.



mill. Three machines in sequence; one complete processing chain:

1. Blue Devil — Shredding without foundations

Zato's twin-shaft shredder is designed to handle a wide range of materials: from mixed ferrous scrap to end-of-life vehicles through to aluminium. Unlike a hammer mill, it requires no special foundations or the permits typically associated with grinding plants. It can be installed on any existing paved surface.

Its cutting action, rather than impact, releases non-ferrous metals from the ferrous matrix in a controlled way, producing the right particle size for the downstream separation stages.

This is where the accordion effect is broken.

2. scrap cleaning line — Magnetic and gravimetric separation

The shredded material feeds into the scrap cleaning line, which combines magnetic separation, to extract the ferrous fraction, with gravimetric separation for density-based classification. The output is a clean, non-ferrous stream ready for the final stage, with the ferrous fraction already separated and independently valorised.

3. ECS — Market-ready Zorba

The eddy current separator closes the chain: it isolates conductive non-ferrous metals, primarily aluminium, then copper and zinc, from the residual stream. The result is high-purity Zorba, directly tradeable on international markets without any further processing.

Competitive advantage on multiple fronts

The Zato solution is not just technical: it is a structural advantage over any alternative currently available. If you run a facility that processes light scrap, this is what changes in practice:

- No civil works: no special foundations, no reinforced concrete slab. The system is installed on an existing yard surface with no construction work required.
- Minimal footprint: the complete line occupies significantly less floor space than a hammer mill plant of equivalent capacity. It works even where space is limited.
- Simplified permitting: without a hammer mill, environmental authorisation procedures are considerably faster and

less costly. Less waiting time; earlier production start.

- Controlled operating costs: lower energy consumption per tonne processed compared to a hammer mill. Less wear, less unplanned maintenance, less downtime. The margin you recover on Zorba is not eaten up by running costs.
- Accessible investment: taken together, these factors substantially lower the barrier to entry, opening Zorba recovery to a much wider range of operators.

Building hammer mills for over 20 years

Zato knows hammer mills inside out: it builds them. That's exactly why it created the alternative. For large-scale ELV processing, hammer mills remain the right tool and nothing replaces them. But knowing a technology deeply also means knowing when a different solution is better. For operators who process light scrap and want a faster, leaner, simpler route to premium Zorba, Zato has built exactly that: same quality output and a smarter path to get there.

Is your Zorba given up for free?

Across Europe and beyond, the scrap metal supply chain is made up largely of mid-sized and smaller operators who find themselves in a paradoxical position: they process materials that contain Zorba but lack the tools to recover it. As a result, every day, tonnes of value leave their yards priced as ferrous scrap.

At current Zorba valuations, recovering even a few percentage points of non-ferrous content from light scrap translates into real margin gains over the course of a year. Run the numbers on the annual throughput: the figures speak for themselves.

The barrier to entry is far lower today than most operators realise. You do not need to be a large-scale plant to recover Zorba like one.

The time is now

The metal recovery market is moving fast. Pressure on raw material prices, decarbonisation targets and new circular economy regulations are redrawing the competitive landscape. Those who can extract value from streams that were previously processed sub-optimally hold a real, measurable and sustainable advantage.

The Blue Devil + scrap cleaning line + ECS combination is not a shortcut: it is a mature, field-tested industrial solution that delivers commercially viable Zorba with an investment profile suited to operators who do not have, and perhaps do not want, a hammer mill.

No hammers. Just Zorba. Just Zato.



Zato knows how to deal with Zorba.