

Recycling To Be Made More Efficient With Steel-Built Home Processing Unit

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ASSOCIATION

The World Steel Association (worldsteel), headquartered in Brussels, Belgium, is one of the largest industry associations in the world, with members in every major steel-producing country. Its members represent around 85% of global steel production.

This monthly column features steelStories from worldsteel, covering automotive, construction and building, infrastructure, and innovation.

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A revolutionary new approach to recycling aims to bring the process into people's homes, guaranteeing closed loop recycling and product remanufacture.

The Lasso system is a sleek, scaled-down industrial recycling facility that can fit inside the home alongside any other domestic appliance. Able to be installed using the same connections as a dishwasher, the unit can recycle glass, plastic and even metals.

Unlike traditional street collection recycling systems, which have multiple material streams all mixed together, the Lasso produces recycled materials of far higher quality that can then be remanufactured into goods of similar value.

This is a vast improvement on the efficiency of the current system where less than half of the materials collected for recycling are actually recycled, with the majority of this being remade into lower value products.

Smart Recycling

Loading the Lasso is very simple, with separate trays for different plastics, colors of glass and metals. The machine will not run with materials in the incorrect placings, so there is no chance of contamination of recycling streams.

This is made possible through special sensors and software that can analyze a material in seconds. This system can also integrate with local bottle deposit schemes, scanning bar codes and refunding credit to a user's account.

Once all the materials are correctly placed, the user simply adds detergent and the unit begins its wash cycle. High-pressure spraying removes labels, adhesives, and any other debris or residue before the recycling is dried ready for the next phase.

The Lasso uses miniature granulators specially designed for each material to be processed in a manner that optimizes their remanufacture. Once they have been ground down, the materials are stored separately by their material and color.

Smart Collection

The team at Lasso estimate that a standard household would need to empty their Lasso roughly once every 8–10 weeks. Users are notified that the unit is at capacity via the app or on the appliance itself.

There are no specific collection days planned; instead users can simply book a no-fee pickup through the app and be ascribed a timed slot for when a collection vehicle is able to reach their location. Then the removable product storage container can simply be taken to the street and the app will notify the user upon collection.

Smart Materials

The Lasso requires a high degree of material toughness. As such, its components will be largely manufactured from steel and stainless steel. This allows it to reliably process materials such as glass and other metals.

Manufacturing predominantly from steel also means that the appliance itself can be near-fully recycled at the end of its useful life. Indeed, each Lasso unit is already made from 40% recycled steel, further emphasizing its closed-loop credentials.

With just 2% of material globally being recycled in a closed loop, innovative, steel-built alternatives like the Lasso present a viable opportunity to lower environmental impacts and limit the extraction of raw materials.

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