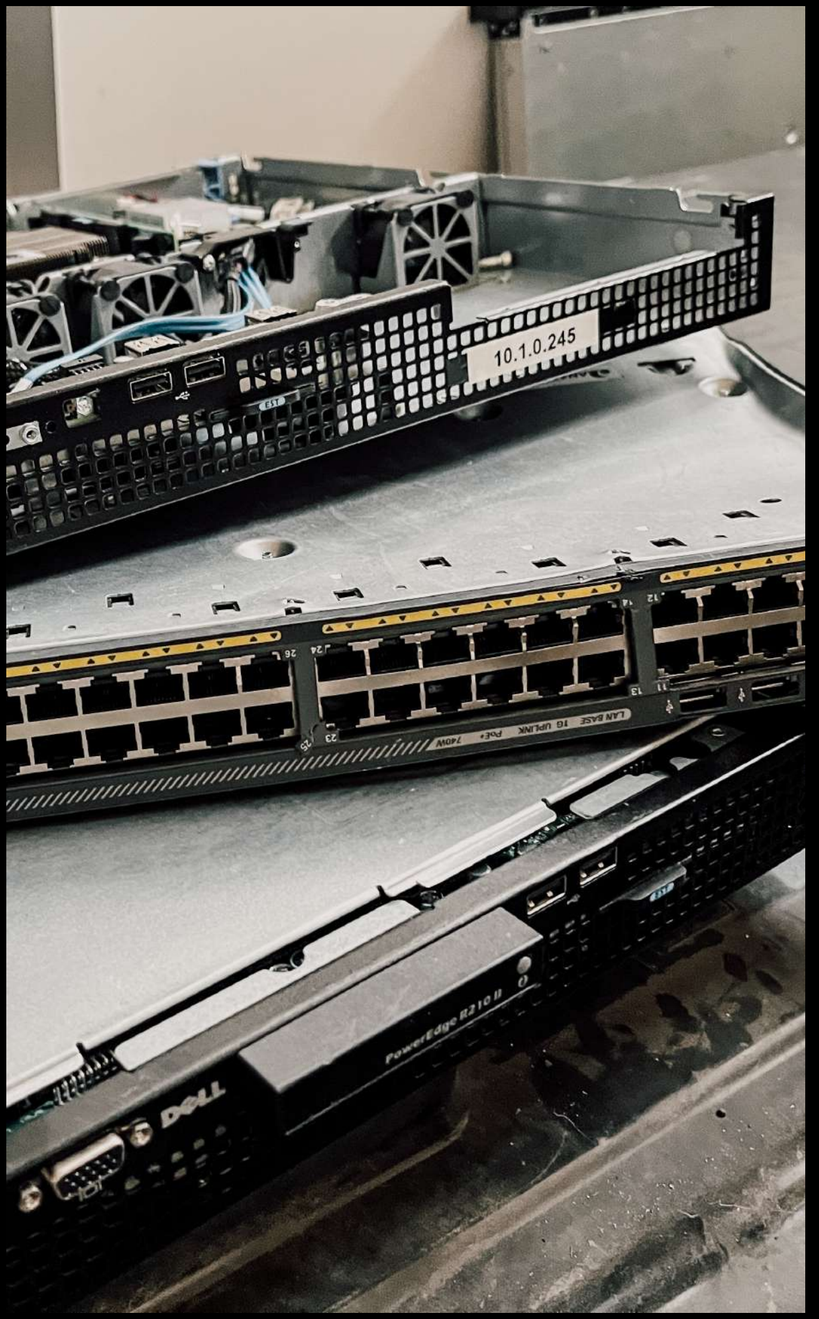
HIRO ROBOTICS

Robotics and AI for industrial-scale e-waste recycling.

Making circular electronics efficient, scalable and profitable.



Demand for critical materials is exploding. So is e-waste.

€ 82 B
worth of materials are contained in e-waste every year.
78% is lost globally.

GLOBALLY GENERATED E-WASTE

TODAY	62 000 BKg
2030	82 000 BKg

+32%

E-DEVICES PLACED ON THE MARKET

TODAY	96 000 BKg
2030	120 000 BKg

+25%

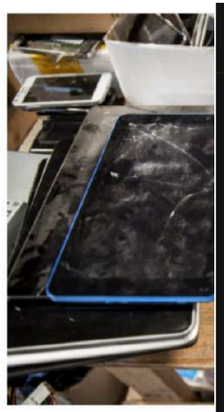
https://www.nytimes.com/2024/01/20/climate/rare-earth-recycling.html

The New York Times

Rare Earth Metals May Be Lurking in Your Junk Drawer

And that's a good thing. They're critical for renewable energy, and a new study says recovering them from old cellphones and other waste could help meet the demand.

Share full article



https://www.washingtonpost.com/technology/2024/10/29/ai-electronic-waste-recycling/

The Washington Post
Democracy Dies in Darkness

The AI boom may unleash a global surge in electronic waste

Most e-waste is never recycled. Data center upgrades for AI projects could significantly add to the problem, researchers say.

October 29, 2024

4 min 90

Workers disassemble discarded computer monitors near an e-waste workshop in New Delhi last year. (Yawar Nazir/Getty Images)

New regulations are forcing a system upgrade.

Starting in 2024, the EU ESPR sets strict standards now mandatory for market access.
Even stricter regulations are expected starting in 2027.

https://en.ilsole24ore.com/art/eu-ecodesign-regulation-l-final-ok-durable-and-recyclable-goods-AG1Z4NH

Il Sole 24 ORE

Servizio | European Standards

Ecodesign Regulation: EU gives final approval to durable and recyclable goods

The EU Council voted in favour of legislation that updates the 2009 directive, introduces a digital passport obligation and prohibits the destruction of unsold goods. Italy the only country abstained

by Marta Casadei
28 May 2024

Advancing sustainability through the Ecodesign for Sustainable Products Regulation

The Ecodesign Forum takes place in Brussels on 19 and 20 February and is key to helping implement the ESPR.

https://environment.ec.europa.eu/news/advancing-sustainability-through-espr-2025-02-19_en

Requirements for new e-devices overview:

ENERGY EFFICIENCY ☐	EXTENDED LIFESPAN ☐
HIGH RECYCLABILITY ☐	DESIGN TO REPAIR ☐
CARBON TRANSPARENCY ☐	2ND LIFE MATERIALS USAGE ☐

Circularity breaks at multiple critical stages

DESIGN & SOURCING STAGE

Products are not designed for repair or recovery, while second-life materials are fragmented, uncertified and hard to access for producers.

RECYCLING STAGE

Manual e-waste treatments are slow and costly, while indiscriminate shredding reduces recovery rates and overall value.

OUTPUT VALORIZATION STAGE

Recovered materials lose value after recycling, as outputs are sold as mixed fractions and supply-demand matching lacks visibility and coordination.

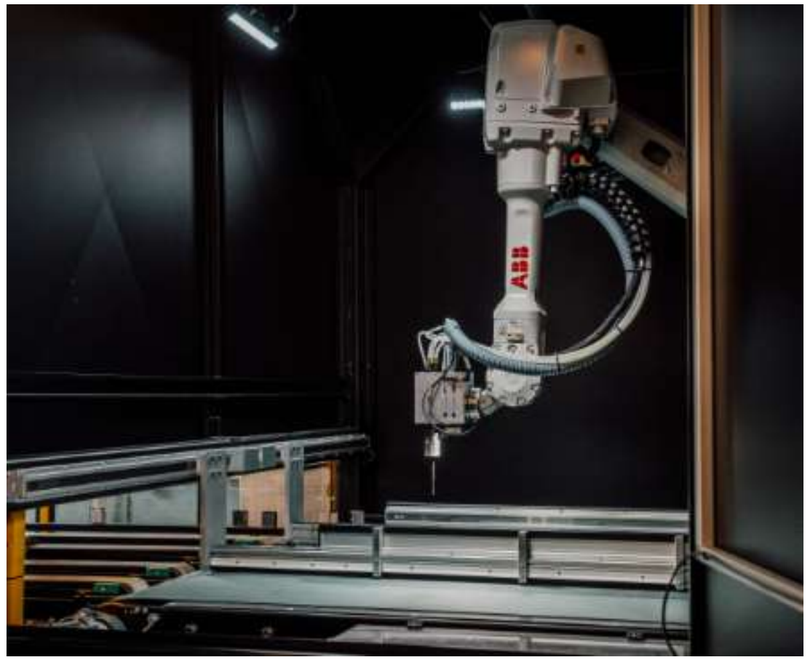
SOLUTION

Hiro addresses every critical stage of circular electronics.

REMAKE UNIT

Design for repair consulting and second-life materials suppliers identification.

RECYCLE UNIT



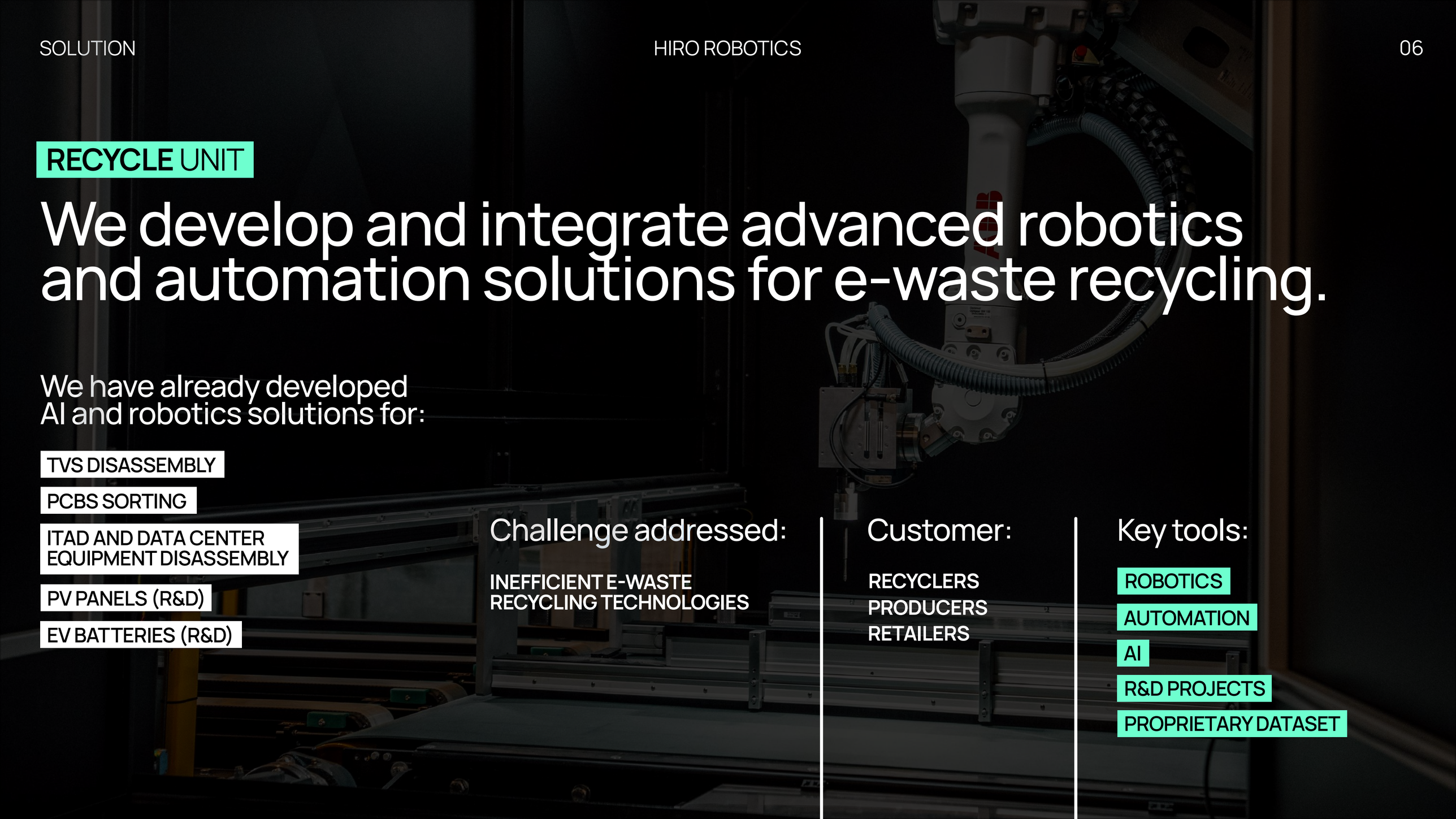
Robotic pre-treatment and treatment systems development and integration.

REVALUE UNIT

Software-based matchmaking for output material valorization.

RECYCLE UNIT

We develop and integrate advanced robotics and automation solutions for e-waste recycling.



We have already developed AI and robotics solutions for:

- TVS DISASSEMBLY
- PCBS SORTING
- ITAD AND DATA CENTER EQUIPMENT DISASSEMBLY
- PV PANELS (R&D)
- EV BATTERIES (R&D)

Challenge addressed:

INEFFICIENT E-WASTE RECYCLING TECHNOLOGIES

Customer:

RECYCLERS
PRODUCERS
RETAILERS

Key tools:

- ROBOTICS
- AUTOMATION
- AI
- R&D PROJECTS
- PROPRIETARY DATASET

Some examples of our e-waste recycling technologies.

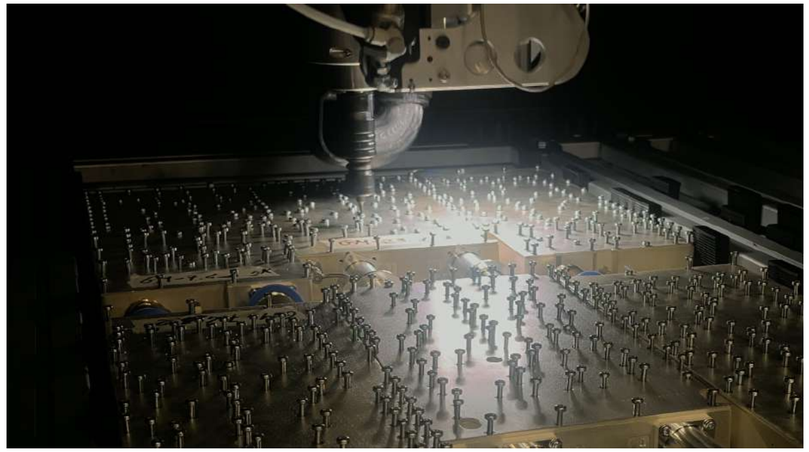
FPD DISASSEMBLY

PATENTED

Designed to automate the most complex and time-consuming phases of TVs and monitors disassembly.

ITAD ELECTR. UNSCREWING

PATENTED



A robotic module engineered to unscrew electronic components where disassembly starts with fasteners.

PCBS SORTING

PATENTED

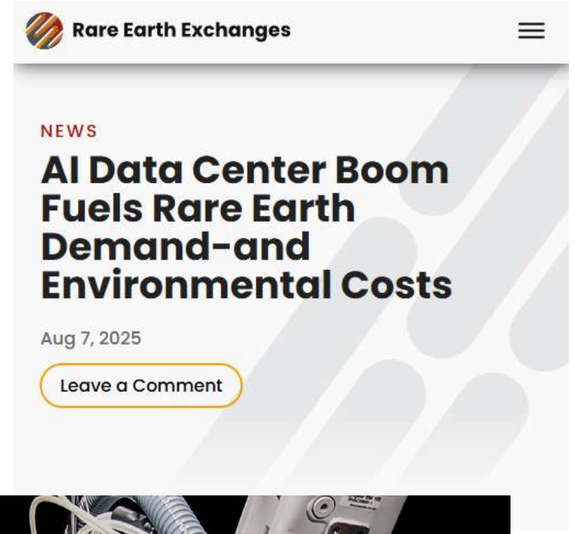
A system that classifies printed circuit boards using AI according to the type, size and shape of boards and components.

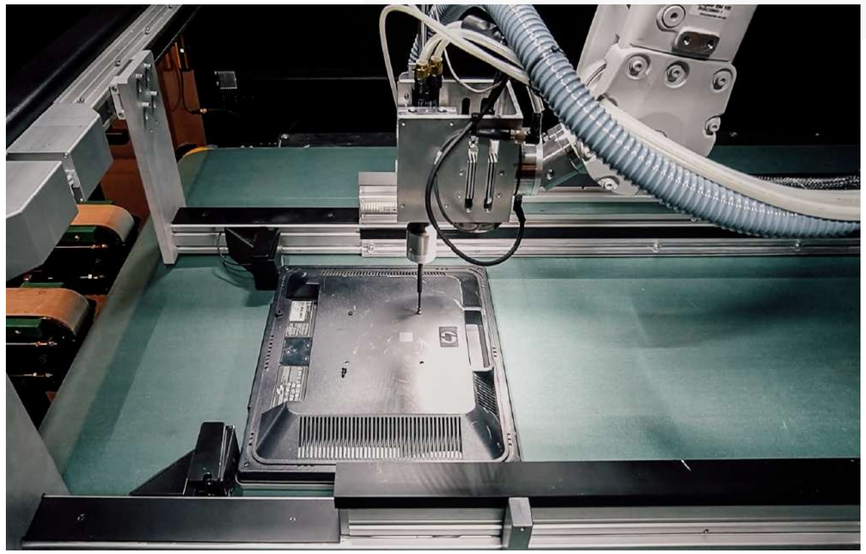
Hiro’s solutions achieve between 20% and 40% higher safe CRMs extraction vs. traditional methods.

Global demand for rare earths and critical raw materials is expected to increase between 400% and 600% by 2030.

RARE & EU Critical Raw Materials Act

https://rareearthexchanges.com/news/ai-data-center-boom-fuels-rare-earth-demand-and-environmental-costs/





HIRO'S USE CASE

99% of valuable materials recovered

+72% faster compared to full manual processing

x10 energy savings w.r.t. shredding

½ environmental footprint w.r.t. shredding

We are currently targeting European e-waste recyclers, electronics manufacturers and large electronics retailers.

€ 20.8 B TAM

€ 316 M SOM

estimated on 5Y EU opportunity

13.5%

annual CAGR of the electronic waste recycling market according to Global Market Insight

We are not robots

DAVIDE LABOLANI
CEO & Co-Founder

TOMASO MANCA
Head of Marketing

MICHELE OLIVIERI
CTO & Co-Founder

JACOPO LOTTERO
Head of Engineering

IVANO LAVINA
COO

Prev. Managing Director

GIOVANNI GATTO
Board member

Prev. Senior VP @Sick Group

MARCO PUSCEDDU
Head of PM

Prev. Head of PM @Ambi Robotics

ALICE TORI
Head of R&D

Prev. Head of R&D @Osai A.S. S.P.A.

+ 11 highly specialized engineers in AI, mechanics and robotics

Hiro operates with a B2B model, with an average € 0.3 million upfront sale per customer for hardware and software, plus 20–30% ARR from recurring services.

RECEIVED ORDERS OVER THE YEARS

2023 € 0.6 million
2024 € 0.9 million
2025 € 1.4 million
2026 FORECAST € 5 million
2027 FORECAST € 9 million

https://www.ilsole24ore.com/art/rifiuti-elettronici-si-amplia-l-impianto-a2a-carcere-bollate-AGTwDWg

Il Sole 24 ORE

Servizio | Economia circolare

Rifiuti elettronici, si amplia l'impianto di A2A nel carcere di Bollate

21 ottobre 2024

Alla struttura, operativa dal 2018, si aggiunge linea di trattamento che sfrutta intelligenza artificiale e robotica collaborativa

Intelligenza artificiale

La nuova linea inaugurata da A2A, sviluppata in collaborazione con Hiro Robotics, sfrutta l'intelligenza artificiale e la robotica collaborativa. Unica nel suo genere, consente di ridurre

Before

2023

Robotic disassembly technology v2 market launch.

iren

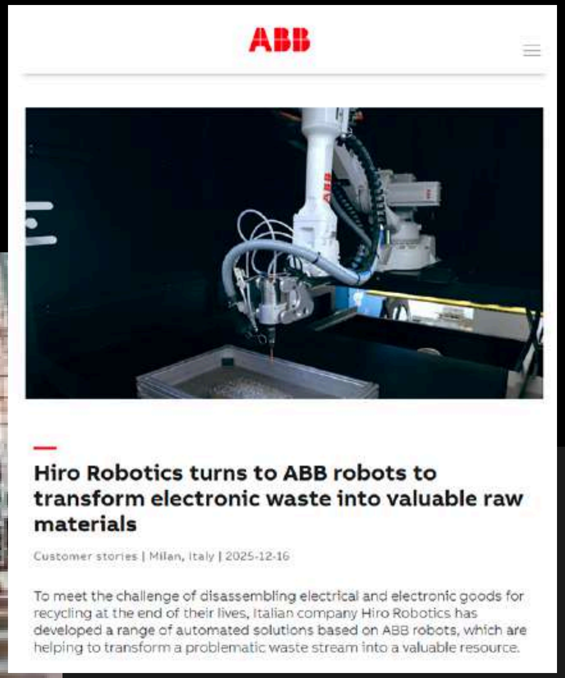
National Geographic Italia - March 2025 Issue

2024

Italian market consolidation.

a2a

2025



ABB

Hiro Robotics turns to ABB robots to transform electronic waste into valuable raw materials

Customer stories | Milan, Italy | 2025-12-16

To meet the challenge of disassembling electrical and electronic goods for recycling at the end of their lives, Italian company Hiro Robotics has developed a range of automated solutions based on ABB robots, which are helping to transform a problematic waste stream into a valuable resource.

https://new.abb.com/news/detail/131867/
cstmr-hiro-robotics-turns-to-abb-robots-to-transform
-electronic-waste-into-valua-ble-raw-materials

EU-scale growth enablement.

ITAD and data center disassembly technologies development.

New R&D segment launch.

Business model with additional circular services testing and validation.

03/25	GERMANY AUSTRIA	PA
04/25	SPAIN AND PORTUGAL	IBER RECYCLING
11/25	FRANCE	RESSOR
12/25	BENELUX	MATECH

Now

2026

Circular services
model launch.

RECYCLE UNIT → REMAKE UNIT / **RECYCLE** UNIT / REVALUE UNIT

European market scale-up
consolidation.

E.V. batteries disassembly
solution development
(R&D).

2027-28

Robotic disassembly
technology expansion
to additional treatable products.

Circular services
model scale-up.

Extra-European
markets expansion.

Thank you

CONTACT

davide.labolani@hirorobotics.com
hirorobotics.com