

“Evaluating and extracting highly recyclable waste in electronic devices”

/ Région Sud - France



Description of the good practice

Founded in early 2017, Technologies de France (TDF)* is an innovative company specializing in green engineering. Today, it focuses on optimizing the market for recycling rich waste : electronic cards, medical radios, telecom boxes, batteries, etc. TDF has noticed that recycling market players do not have today an effective and non-destructive tool to know the exact composition of their waste, which represents a significant shortfall, especially in high-potential recycling markets. For example, in Europe alone, the metal value to be recovered each year in electronic boards is almost 1 billion euros!

So TDF created a solution : OSIRX. Patented internationally, accurate, fast and based on X-ray imaging, OSIRX is the world's first scanner that gives collectors the true value of their rich waste. This is important because if collectors know the true value of their waste, they can sell them better and increase their profit margins. They are then more motivated to collect rich waste, have to hire to ensure the increase of activity, etc. Positive consequence of all this: the whole recycling market is boosted, and more raw materials are recovered. It's a virtuous circle, especially knowing how harmful the mining industry is to the environment.

Take the case of gold (which accounts for about 80% of the value of e-waste): according to the World Gold Council, about 2,700 tons of gold are extracted from quarries each year. This represents 54 MT of CO₂, 400 MT of cyanide, 810 GL of water, 475 PJ of energy (equivalent to half of the annual energy consumption of a country like Belgium). Those very high numbers are another reason to look for innovations such as OSIRX to boost the recycling of rich waste. The OSIRX technology combines high technology, circular economy, respect for the environment and economic profitability.

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**This company is member of the French regional network Éa éco-entreprises, which aim is to promote the emergence of innovative solutions and services to limit the impact of human activities on the environment.*



Results

- Bring more transparency to the recycling market, by giving for the first time the real value of highly recyclable waste such as electronic boards, without destroying them.
- Innovate and improve the recovering of raw materials from rich waste.
- Quickly analyse and quantify the precious/critical metals and rare-earth elements (17 metals such as scandium, yttrium, lanthanide) in the rich waste, especially in electronic boards of WEEE.
- Create a global map database in order to improve WEEE recycling management.
- Maximize the benefits of rich waste collectors.
- Boost the high-potential recycling markets.

Type of waste

Every rich waste, especially the electronic boards of WEEE (computers, smartphones, tablets...).

Location

Technologies de France is based at Technopole Arbois for the environment in Aix-en-Provence (Provence-Alpes-Côte d'Azur, South of France). A prototype of OSIRX has also been implemented in a subcontractor in Gardanne (Provence-Alpes-Côte d'Azur, South of France).

Volume treated

The OSIRX technology can characterize 5 tons of electronic boards per day.

Further information

<http://www.compagnie-france.com/osirx/>
<https://www.laprovence.com/article/edition-marseille/5322845/osirx-valorise-les-dechets-electroniques-en-or.html>
<https://www.provence-pad.com/entreprises/osirx/>
<https://dai.ly/x75mppm>
 (overall presentation of the OSIRX principle, in French).
<https://www.dailymotion.com/video/x780rvo> (3D presentation of the 2nd prototype: OSIRX C).