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Report

RECYCLING IN CHILE TODAY

Local context and new business opportunities

anir
INDUSTRIA DEL RECICLAJE EN CHILE

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CHILEAN GOVERNMENT

General Context

In most emerging economies, industrial and household waste is mainly disposed of in landfills and dumps. Although these facilities meet the established health and environmental requirements, they are not a definitive solution to the growing challenges of waste management faced by different countries.

In a context in which sustainability has gained ground, a new perspective is being encouraged that focuses on the prevention and valorization of waste. This aims to ensure that all waste that can potentially be reused is valorized, avoiding its elimination.

In 2023, the Extended Producer Responsibility Law (EPR Law) came into effect in Chile for two products that were declared priority. In February 2023, targets for tires came into force, and in September of the same year, targets for the most massive segment – containers and packaging – were introduced. Four other categories included in the law (batteries, electrical and electronic items, lubricating oils and fuel cells) are yet to come into effect.

Our country is aware of the need to reduce the use of landfills and better dispose of both industrial and household waste. Along these lines, coordinated work has been undertaken between the public and private sphere to facilitate compliance with the requirements established in Law 20.920.

RECYCLING IN CHILE: A NEW OPPORTUNITY

According to the Chilean Environment Ministry's State of the Environment Report 2023 (REMA)1, in 2021 a total of 19.6 million tons of waste were generated. 96.7% of this was non-hazardous and 3.3% was hazardous.

Of the non-hazardous waste, 49% was of industrial origin, 46.1% was municipal solid waste and 1.6% was sludge from wastewater treatment plants.

Of this non-hazardous waste, 80% was eliminated and 20% recovered.

Waste is mainly disposed of in landfills and dumps. Although these facilities meet the established health and environmental requirements, in a context in which sustainability has gained ground, countries are increasingly facing challenges in their waste management and must promote prevention and recovery. All potentially recoverable waste should be destined for this purpose, avoiding its elimination.

Year	Final Valorization Rate
2015	20.5
2016	22.6
2017	22.6
2018	22.63
2019	20.97
2020	19.99

Source: Environment Ministry.

The Extended Producer Responsibility Law, known as EPR Law 20.920, which came into effect in 2016, establishes increasing valorization goals for different priority products. These include used tires, containers and packaging, lubricating oils, electrical and electronic devices, batteries and fuel cells.

This measure seeks to raise the valorization rate in Chile. Although there is currently a significant idle capacity, given the infrastructure that is already operational at the central level, the current facilities will not be sufficient to cover demand as the targets of the EPR Law progress, especially in regions outside of Santiago (Metropolitan Region) where today around 50% of waste generation is concentrated. This represents a significant challenge; but it also presents a series of opportunities for potential investors. As valorization goals increase, greater coordination in collection and valorization with the corresponding infrastructure will be needed.

Below, we present an overview of the different subsectors and products, which has been prepared using 2022 statistics from the Asociación Nacional de la Industria del Reciclaje (National Recycling Industry Association, ANIR).

Containers and Packaging

CARDBOARD: A FOCUS ON SUSTAINABLE MANAGEMENT.

- Of all the cardboard available in Chile for 2022 (856,061 tons), 47.8% was valorized, while the remaining 52.2% was not. It is estimated that most of the valorized cardboard was of industrial origin. There has not yet been an increase in household collection, although this is expected to change with the EPR Law recently coming into effect.

- This year, the installed capacity for cardboard valorization in Chile was **470,529 tons** nationwide, meaning that up to **55%** could potentially have been valorized. It is estimated that the country's installed capacity will reach **550,529 tons** in three years.

There is **13%** idle capacity for cardboard valorization at the national level.

According to the Asociación Nacional de la Industria del Reciclaje, ANIR, recycling in Chile has steadily increased year by year. Despite this, rates have decreased as more material has become available in the country (MDP). Much of the increase has been generated by products destined for households, which is why they are difficult to recover. Most cardboard is valorized internally in Chile, which demonstrates that the country is a large consumer of recycled fiber.

GLASS: ENCOURAGING PROGRESS IN VALORIZATION.

- In Chile, **33%** of the glass available for recycling at the country level was managed in 2022 (for this calculation, only post-consumption material was considered, not the valorization of productive losses). It is estimated that **302,624 tons** of glass (67%) were not valorized.

- The installed capacity for glass valorization is about 278,650 tons nationwide, meaning that up to **61.7%** of glass could be valorized.

There is **47%** idle capacity for glass valorization nationwide.

The valorization of glass has seen a sustained increase over the last six years, mainly due to the different campaigns that have been carried out regarding the material. Efforts have also been observed to improve collection throughout the country.

There are currently three large glass factories in Chile, which are the same three large-scale valorization sites on national soil.

ALUMINUM: POST-PANDEMIC STABILITY.

- In Chile, **21.3%** of the aluminum available for recycling at the country level was managed in 2022 (only post-consumption material was considered, both domestic and non-domestic, not the valorization of productive losses). It is estimated that **39,101 tons** were not valorized.

- The installed technical capacity in the country for aluminum valorization is **49,180 tons**, meaning that **99%** of available aluminum could be valorized.

- The aluminum containers and packaging market prioritizes cans (90% of what is valorized), but in order to increase the valorization rates of the country's available material, the spectrum must be expanded to other types of products, such as aerosols, tubes, capsules and more.

In its report, the ANIR establishes that in 2022 there was a decrease in imports of containers with and without content compared to 2021 (11% and 21% respectively). This is a period in which the peak of available material in the country was reached.

Finally, the installed technical capacity for recycling (current and projected) is not the critical factor for success in increasing the recycling rate. There is capacity to pretreat and export, but there is insufficient material collection capacity available.

BEVERAGE CARTONS: EXPORT VALORIZATION.

- In 2022, only **2.5%** of the beverage cartons available for recycling at the country level were managed in Chile. This is a subsector in which valorization is carried out mainly through export of the material. It is estimated that **25,153 tons** of beverage cartons were not valorized.

- The installed technical capacity in the country (CTIP) to valorize beverage cartons is **22,850 tons**, meaning that up to **86%** of this material could be valorized. This capacity is made up of a high percentage (97%) of valorization through export.

There is **97%** idle capacity for beverage carton valorization nationwide.

The increase of available material in the country (MDP) is mainly due to the presence of new stakeholders in the beverage carton market and the import of products that are not manufactured in Chile. Valorization of this material is currently carried out through export to Brazil or Mexico.

It should be noted that this is the material with the lowest containers and packaging valorization rate, due to its low price in the market and low domestic demand. This is expected to change with implementation of the EPR Law and the start-up of a new valorization plant in Chile.

POLYETHYLENE TEREPHTHALATE (PET)

- In Chile, **18.6%** of PET plastic available for recycling at the country level was managed during 2022, with the MDP at 118,205 tons per year. Recycling was **98%** plastic bottles. It is estimated that **96,191 tons** of PET were not valorized.

- The installed technical capacity in the country (CTIP) to valorize PET plastic is **40,947 tons**, and the three-year installed technical capacity will be 60,700 tons per year. It is estimated that the current installed technical capacity allows around 34.6% of the available material in the country to be recycled. This would increase to 51.4% with the projected capacity; therefore, it is necessary to focus on collection.

There is **46.2%** idle capacity for PET plastic valorization nationwide.

The managed material in the country has been increasing year after year as a result of the imminent implementation of the EPR Law. This has encouraged collection and environmental education programs.

POLYPROPYLENE (PP)

- During 2022, **19.2%** of the available material in the country for recycling was managed in Chile. This is the collection target to date. It is estimated that **79,067 tons** of PP were disposed of improperly.

- The technical capacity to valorize PP plastic in 2022 was **48,788 tons**, meaning that up to **49.8%** of the total could have been valorized.

There is **61.4%** idle capacity for PP plastic valorization nationwide.

POLYETHYLENE (PE)

- When comparing 2021 with 2022, the MDP increased by 9.9% in 2022. Of this total, **33%** was managed at the country level (only post-consumption material was considered, not the valorization of productive losses). It is estimated that 101,062 tons of PP plastics are inadequately disposed of, and that a large percentage of this is of household origin.

- The technical capacity to valorize PE plastic is **66,735 tons**, meaning that **44.3%** could be valorized.

The projected three-year installed technical capacity would allow up to 82.3% to be recycled. This increase is related to industry agreements aimed at complying with the EPR Law.

The country's non-valorized material has decreased by 35.3% compared to 2016, which reflects the effect of plastic bag regulations.

Automotive Sector

- In 2021, the automotive sector achieved several sales records, closing the period with sales of **415,581 units of new light and medium vehicles**. This represented a **60.6% growth** over the same twelve months of 2020.

- Within this scenario, as there were upward sales figures, the number of used batteries and tires increased exponentially in statistical terms, as did the amount of used lubricating oil.

USED LUBRICATING OIL (ULO): CHALLENGES IN THE INFORMAL MARKET.

- **60%** of the available material in the country corresponded to the automotive sector, **15%** to the mining sector and **25%** was of industrial origin.

- **60.6%** of the total was managed (the co-processing and production of alternative fuel and lubricants is considered valorization or adequate disposal), while **53,097 tons**, or 39.4%, were disposed of inadequately.

- With regard to technical capacity for valorization, currently **99.9% of used lubricating oil** could be processed; however, the informal market for this material has not allowed it.

In the next three years, <u>an oil processing capacity of around 183,842 tons</u> could be reached.

For ANIR, "of the country's non-valorized material (MNVP), 53,097 tons of this dangerous waste – which represents 39.4% of the ULO available to be managed – continue to be delivered irregularly from generators to unknown destinations (informal trade)".

It is also expected that, within the next few years, two new ULO refining plants, with a capacity of close to 13,000 and 43,900 tons respectively, will be commissioned.

BATTERIES: FOCUS ON THE VALORIZATION OF LEAD AND LITHIUM.

- The available material in Chile for the previous year (2021) was 61,452 tons, an exceptional situation due to the increase in liquidity in Chile, as well as the pandemic. This led to an overstock of batteries, meaning that imports fell radically to **33,404 tons** in 2022.

- In this regard, the distribution of batteries is: Lead, 31,569 tons, representing **94.5%** of the total; Lithium, 1,264 tons, with **3.8%**; Nickel, 68 tons, representing **0.2%**; and Others, 503 tons, with **1.5%**.

- 79.8% of the total available material in the country is managed, and there is a valorization for lead and lithium batteries. Some 6,738 tons of used batteries are disposed of inadequately.

- The amount of material that management companies could valorize is **26,665 tons per year**, and there is **47.4%** idle capacity.

The material managed in the country increased steadily between 2016 and 2021; however, it fell in 2022 as a result of the stabilization of the post-pandemic market. It should be noted that lead batteries represent 99% of valorized material. It should also be noted that the valorization of lead batteries is carried out by a single recycling plant in Chile, which has showed a drop off as a result of the decrease of the country's available material, returning to pre-pandemic values.

TIRES: CHANGES IN THE AUTOMOTIVE INDUSTRY.

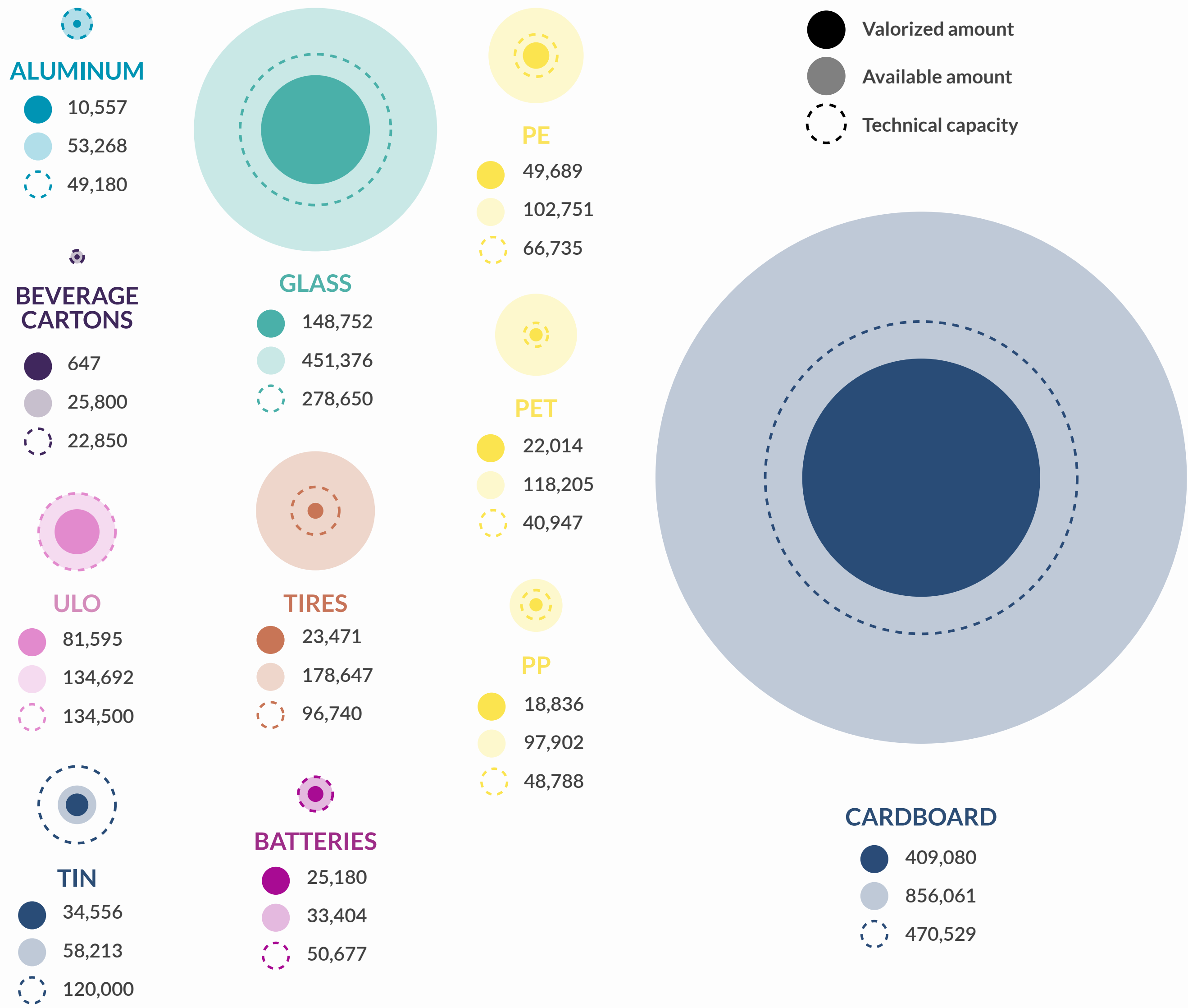
- During 2022, 13.1% of used tires were managed in Chile. It should be noted that used tires are those generated by replacing another tire after retreading (CINC 2021).

- Tires from cars, vans, buses, trucks and those used in industry were considered for this purpose. They are divided in percentage terms as follows: cars and vans, 47,230 tons (**26%**); trucks and buses, 55,489 tons (**31%**); mining forestry and other industry, 74,544 tons (**42%**); other minor means of transport, 1,384 tons (**1%**).

<u>There is **74%** idle capacity for used tire valorization nationwide</u>.

ANIR adds that "special emphasis must be placed on promoting the market for products derived from tire valorization (traction demand for secondary material), in view of the targets associated with the EPR Law." Furthermore, a sustained increase in recycling is detected; however, it is necessary to promote the market for products derived from the valorization of this waste.

RECYCLING STATISTICS 2022



ULO: Used Lubricating Oil

PE, PP y PET: Types of plastic

Figures in annual tons

Source: Study and consultation carried out by Kyklos

InvestChile

InvestChile
Foreign Investment Promotion Agency

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